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The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, JUNE 27, 1929 $6.00 a Year

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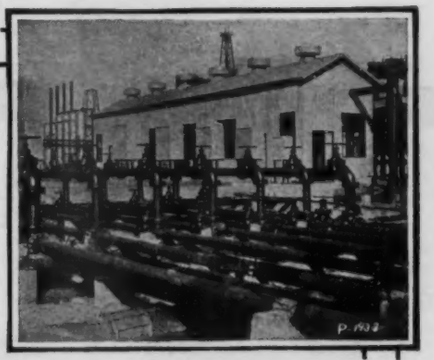
150 Pounds Pressure

CRANE VALVES

Pressure

From well to gas lift and pumping station



—from gas lift station to natural gasoline and main line compression station

—from compression station to city distribution

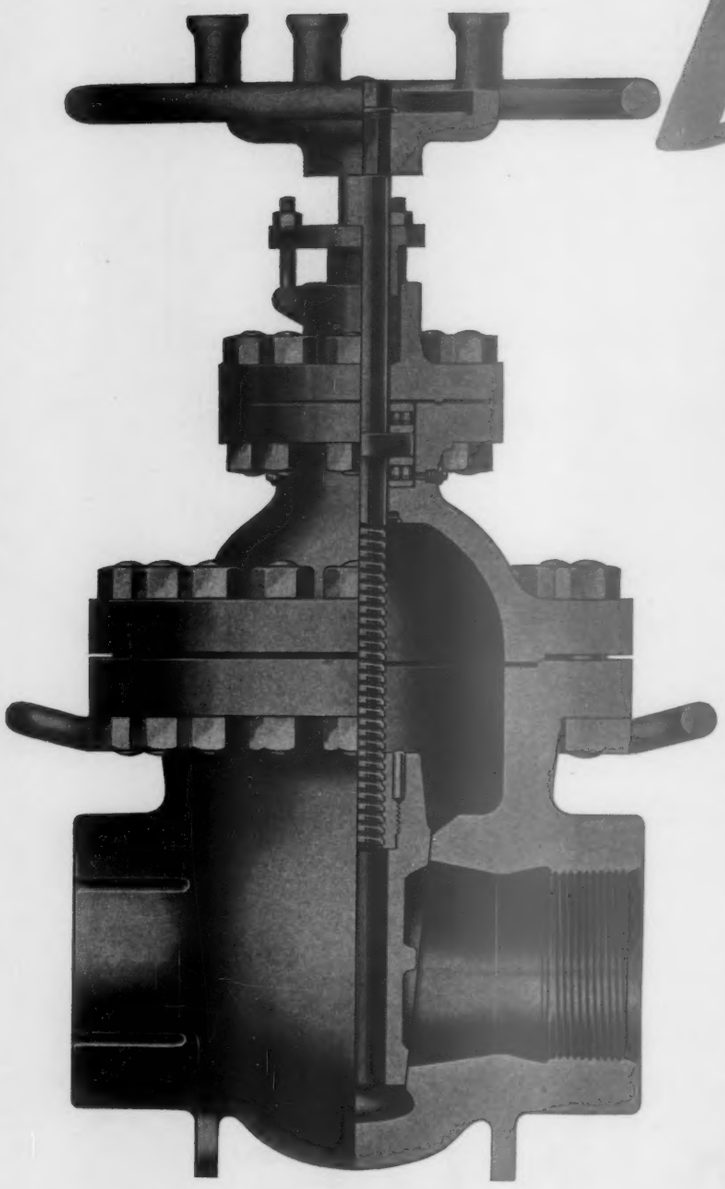
A complete line of valves and fittings, for all gas working pressures, to convey and control natural gas at every step in its progress from the ground to the consumer, is supplied by Crane Co. For dependable service equip your wells, pipe lines, pumping stations, and distributing stations with Crane piping materials.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICE: 23 WEST 44TH STREET
Branches and Sales Offices in One Hundred and Eighty Cities

Advertisers' Index on Page 33 Table of Contents on Page 34

the new CHAPMAN Drilling Valve



The latest development in production equipment. Here are the high points—

Built for 3000 lb. test pressures—1500 lb. working pressures—

All castings are CHAPMAN Chrome Nickel Steel (stronger than forged steel.)

Stem and all studs of alloy steel—Roller bearings for ease of operation—Lugs on hand wheel permit the easy use of lever in opening or closing. Hand wheel drilled to permit bolting to standard 4 in. by 10 in. pipe flange and extension pipe, or universal joint and shaft, to operate from a distance.

Seats are extra large in diameter, to avoid injury in passing tools—

Guide rings and taper absolutely prevent obstruction in passage of tools, bailers, etc.—

You can get full details on this new Valve from the Chapman distributor in your territory, or by writing us direct.

NITRALLOY

The new valve mounting can now be obtained exclusively in CHAPMAN iron and steel body valves. Hard enough to scratch glass, immune to temperature effects, this material gives to valves many times their former service life. Write to us or to our nearest distributor for full details.

The Chapman Valve Manufacturing Co.
Indian Orchard, Mass.

Branch Offices

Houston	Philadelphia	Los Angeles
Atlanta	Chicago	New York
Detroit	San Francisco	Tulsa
Pittsburgh	Syracuse	Boston

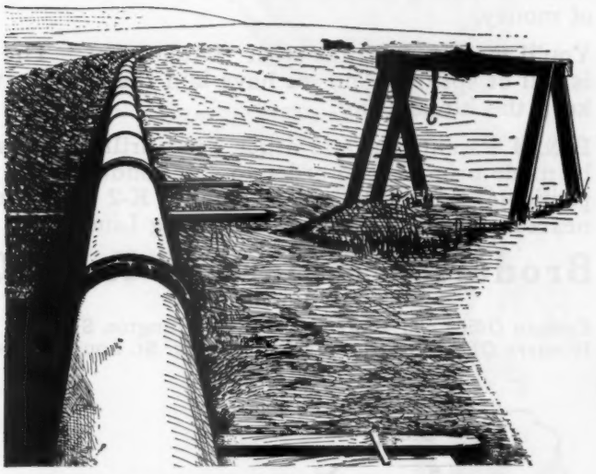
Distributors

E. L. Wilson Hardware Co., Beaumont and Houston
Wagner Supply Co., Fort Worth

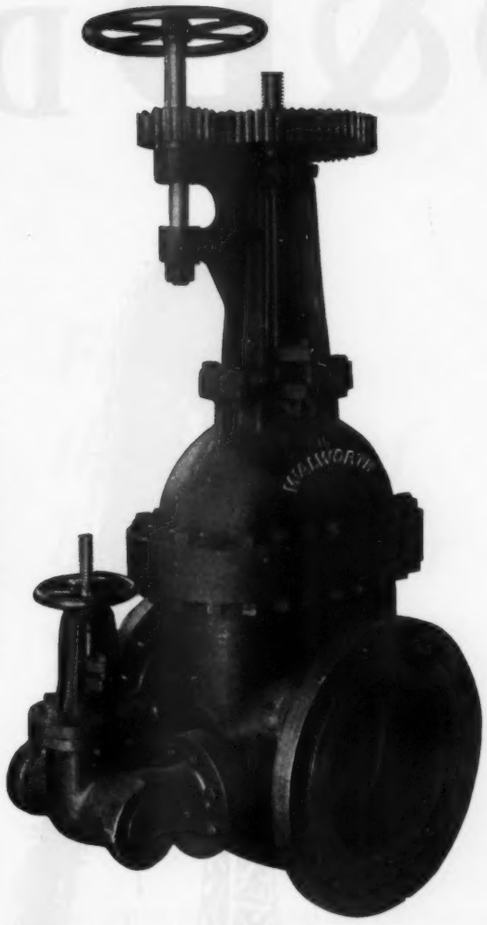
WALWORTH

STEELIRON DOUBLE DISC GATE VALVES

500 LBS. WORKING GAS PRESSURE



Along the Amarillo-Denver Gas Pipe Line. A Walworth Valve Installation.



Spur gear operated, with by-pass, these valves are especially designed for gas pipe line service carrying pressures up to 500 lbs. per square inch. They are furnished regularly in rising stem type with spur gear operation and four-inch by-pass. These valves are available also without the by-pass and without the gearing if so desired.

Two bronze wedges are used for spreading the discs. The stem is of rolled bronze and the seat rings and disc face rings are of hard bronze.

Body, bonnet, discs and yoke are of Walworth Steeliron, insuring strong and compact castings.

A sturdy, dependable valve for gas pipe line service. The unanimous choice of engineers on some of the greatest pipe line projects ever undertaken.

Made in sizes 14, 16, 18, 20 and 24 inches.

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa., and Attalla, Ala.

Distributors in Principal Cities of the World

Walworth Company, Limited, 620 Cathcart St., Montreal, P. Q.
Walworth International Co., New York, Foreign Representative

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company. 114-116 West Second Street. Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879.

B&B Patentsteel Drilling Lines

Till the Well Comes In

Spud 'er in. Then let a B & B Patentsteel Drilling Line see the job all the way through.

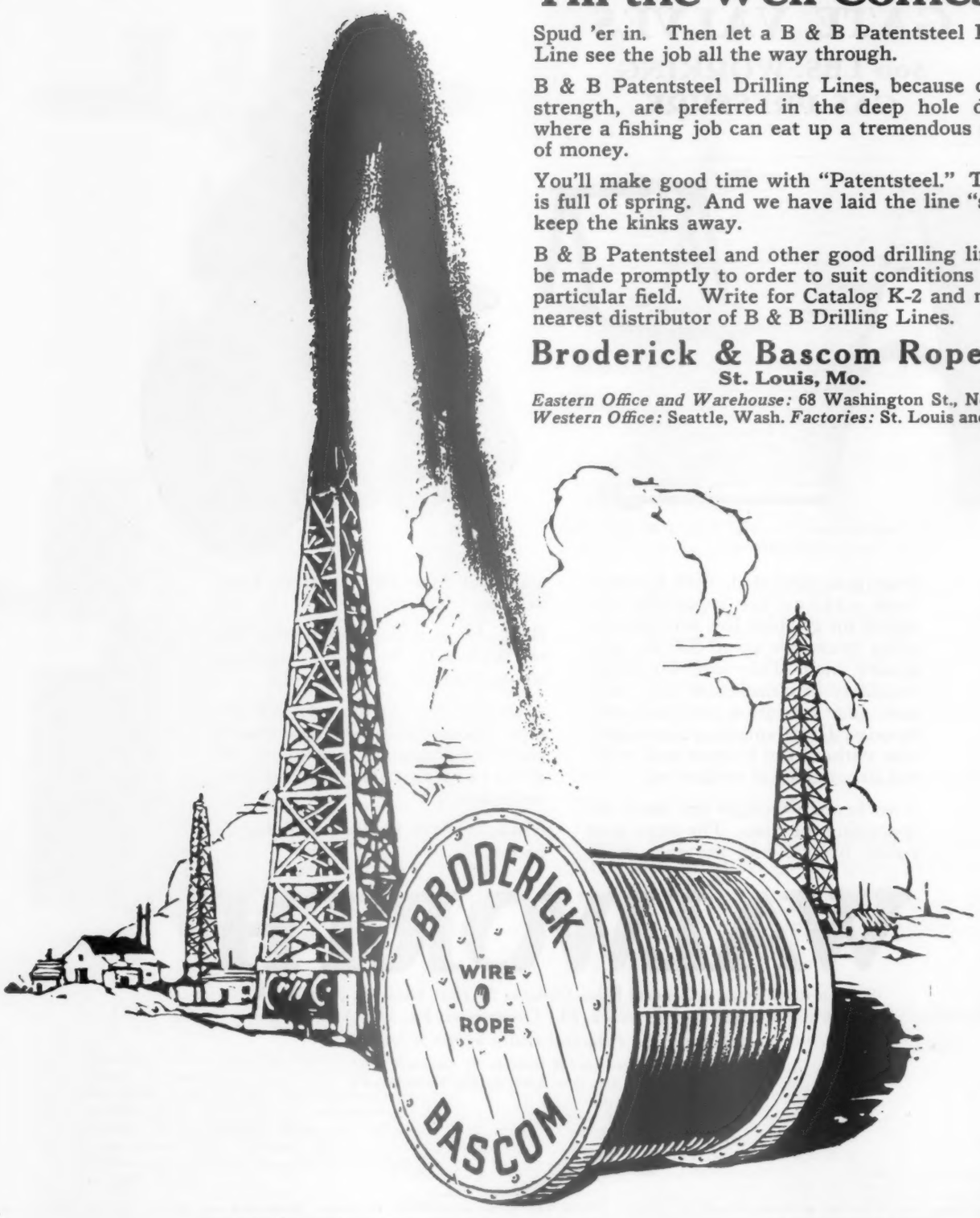
B & B Patentsteel Drilling Lines, because of their strength, are preferred in the deep hole districts where a fishing job can eat up a tremendous amount of money.

You'll make good time with "Patentsteel." The line is full of spring. And we have laid the line "soft" to keep the kinks away.

B & B Patentsteel and other good drilling lines can be made promptly to order to suit conditions in your particular field. Write for Catalog K-2 and name of nearest distributor of B & B Drilling Lines.

Broderick & Bascom Rope Co.
St. Louis, Mo.

Eastern Office and Warehouse: 68 Washington St., New York
Western Office: Seattle, Wash. *Factories:* St. Louis and Seattle



J477

Aid Conservation!

Fight the waste of bottom water with

EAGLE Lead Wool

One of the most logical and efficient aids to conservation is Eagle Lead Wool—the economical, convenient, quick method of plugging off bottom water. Under pounding, this easy-to-handle lead rope becomes a plug of pure lead, filling every water crevice. Sold by dealers with Cartridge Containers to fit all casing sizes. Free folder on request.

EAGLE Rope Socket Metal

A metal especially designed for socketing wire rope—economical and long lasting. 35% lighter, four times as hard as No. 4 Babbitt. Write for free booklet.

Reg. U. S. Pat. Off.

The Eagle-Picher Lead Company

Producers of lead, zinc and allied products Chicago · Joplin · Cincinnati

When You See Your Tubing Eaten Away How About Your Casing?

When inferior tubing corrodes, it is usually a warning that, sooner or later, water will trickle through corroded casing walls to cause more grief. Protect yourself from such troubles by using Reading 5-Point Casing and Tubing, made of time-tested, corrosion-resisting Genuine Puddled Wrought Iron.

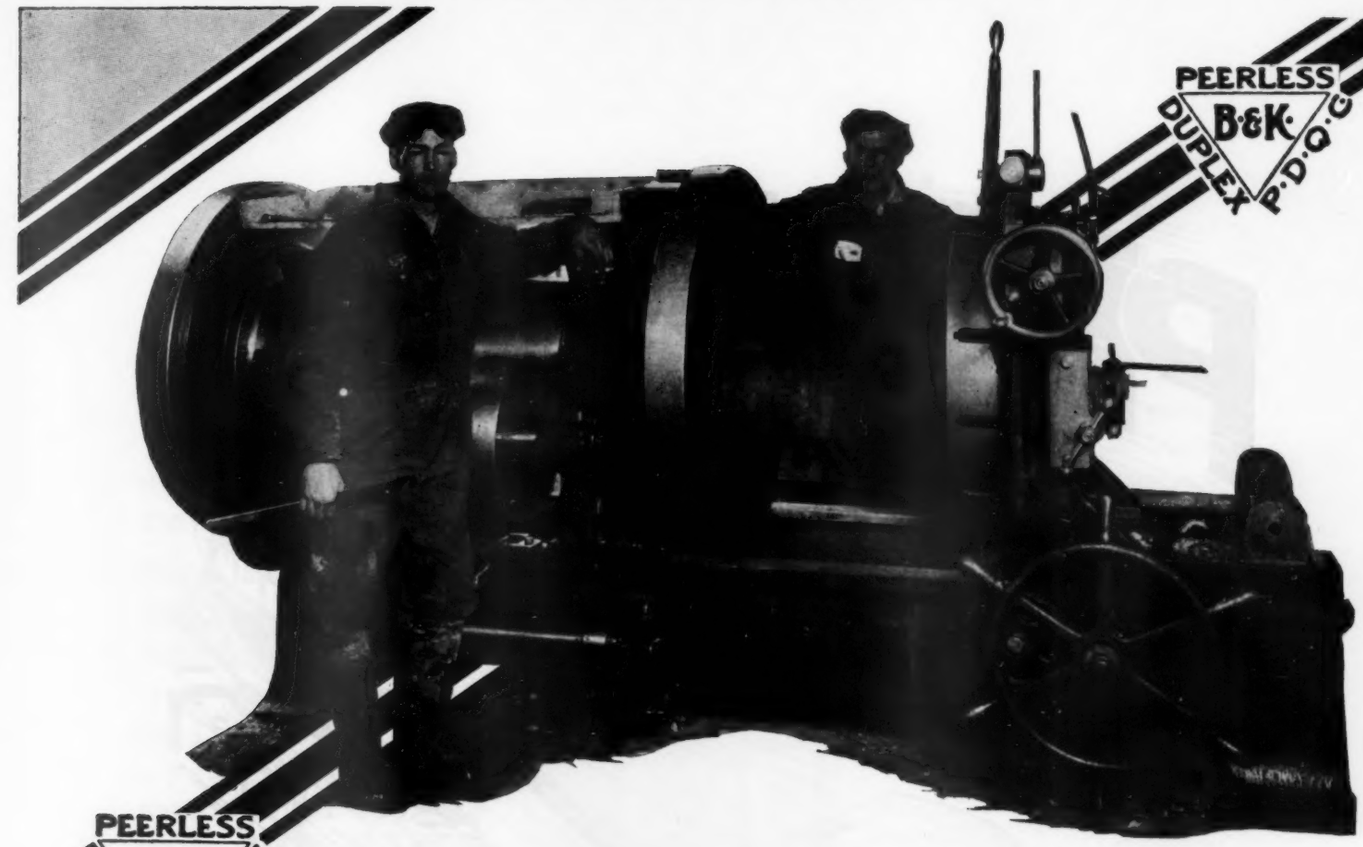
Long life is puddled into Reading 5-Point Tubing and Casing — filaments of silicious slag, a substance as rust-free as plate glass, guard the pure iron from corrosion. Reading 5-Point Pipe is the only wrought iron pipe double welded — it is insurance against leaky joints, splits, galled threads and crystallization.

READING IRON COMPANY, Reading, Pennsylvania

Atlanta · Baltimore · Cleveland · New York · Philadelphia
Boston · Cincinnati · St. Louis · Chicago · New Orleans
Buffalo · Houston · Tulsa · Seattle · San Francisco
Detroit · Pittsburgh · Ft. Worth · Los Angeles · Kansas City

Reading pipe distributed by: Frick-Reid Supply Corp., Bradford Supply Co., Republic Supply Co., Superior Tube Co., Reading Iron Co. of Texas

GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES



It's their tenth B & K Pipe Threading Machine

THIS 18-inch Bignall and Keeler machine was recently installed in the shop of the Mid-Continent Pipe Machine Company, at Valley Center, Kansas. Another Bignall and Keeler machine was added to their equipment because Bignall and Keeler machines have demonstrated over a period of years their ability to cut better threads and do it in less time than any other machines. Direct comparison of samples of thread cuts for correct taper, shape and appearance have proved the superiority of Bignall and Keeler Pipe Threading Machines and Dies. They are made in seventeen types and sizes for every pipe threading requirement.

Send for the illustrated catalog and let us help you select the proper equipment for meeting the keenest competition.

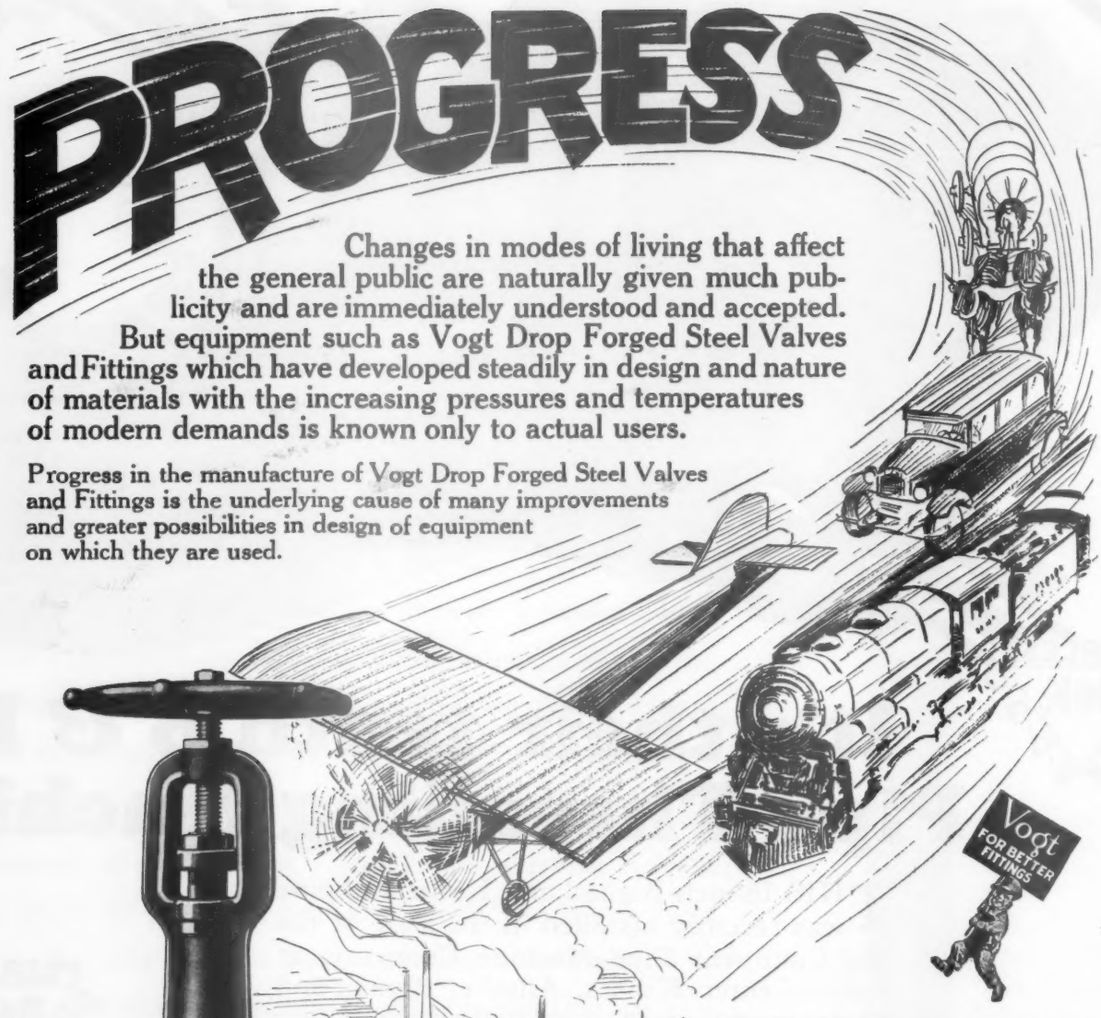
Bignall & Keeler Machine Works
of the N. O. Nelson Mfg. Co.
Edwardsville, Illinois

O&GJ6-27-Gray

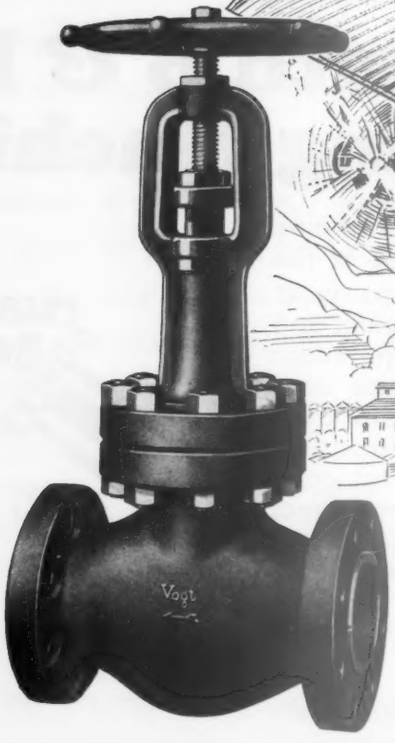
PROGRESS

Changes in modes of living that affect the general public are naturally given much publicity and are immediately understood and accepted. But equipment such as Vogt Drop Forged Steel Valves and Fittings which have developed steadily in design and nature of materials with the increasing pressures and temperatures of modern demands is known only to actual users.

Progress in the manufacture of Vogt Drop Forged Steel Valves and Fittings is the underlying cause of many improvements and greater possibilities in design of equipment on which they are used.



The Vogt F-6 Catalog depicting a most complete line of Vogt Drop Forged Steel Valves and Fittings will be sent on request.



4"-1350 lb. A. E. S. C. Standard Globe or Gate Valve with flanges forged integral with body.

Vogt DROP FORGED STEEL VALVES AND FITTINGS

HENRY VOGT MACHINE CO.
INCORPORATED
LOUISVILLE, KY.

Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.

Branch Offices:
NEW YORK
CHICAGO
PHILADELPHIA
CLEVELAND
DALLAS

. . . Piping *that need never leak*

PIPING welded by experienced operators properly supervised is piping *that need never leak.*

Now TUBE-TURNS, the new seamless drawn fitting for welded piping, have simplified and improved pipe welding *by eliminating angle welds on turns.* A TUBE-TURN requires but two welds straight across the pipe *for any change of direction.*

TUBE-TURNS are forged from seamless tubing without thinning or buckling of walls or reduction in carrying capacity (cross-section). They make possible short-radius turns *without excessive friction losses.* For further details and specifications write TUBE-TURNS, *Incorporated,* 1252 Logan St., Louisville, Kentucky.

Distributors Carrying Stock:

THE MASON EQUIPMENT CO.
1918 Vermont Avenue Toledo, Ohio
MAINTENANCE ENGR. CORP.
1400 Conti Street Houston, Texas
THE MOORLANE CO.
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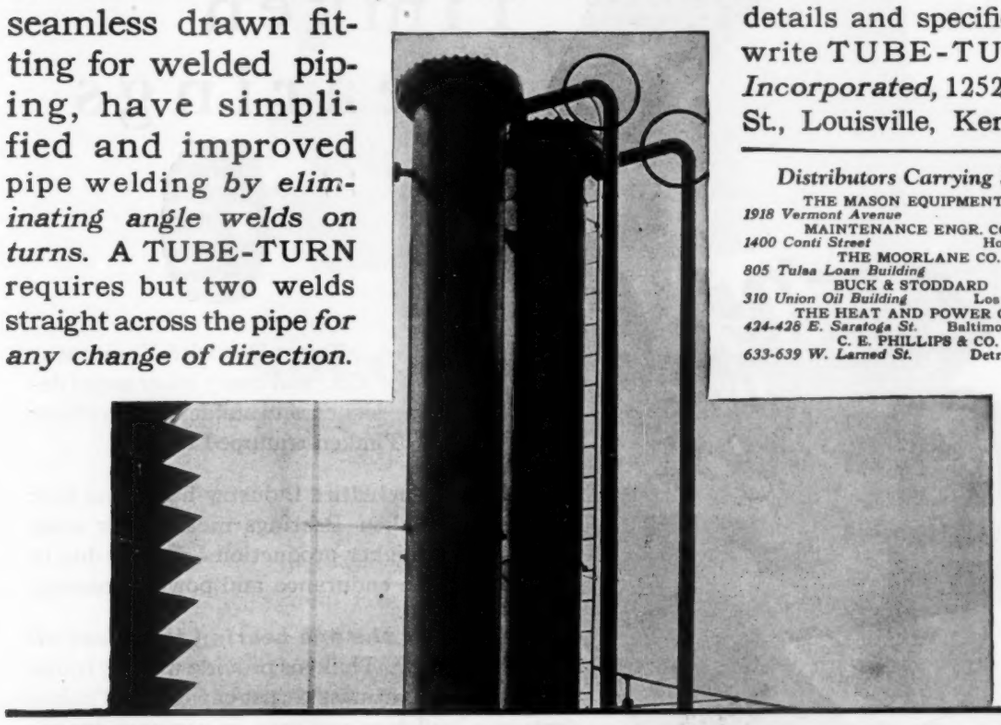
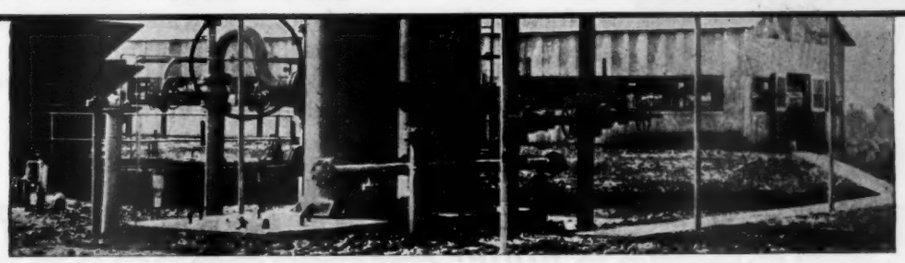
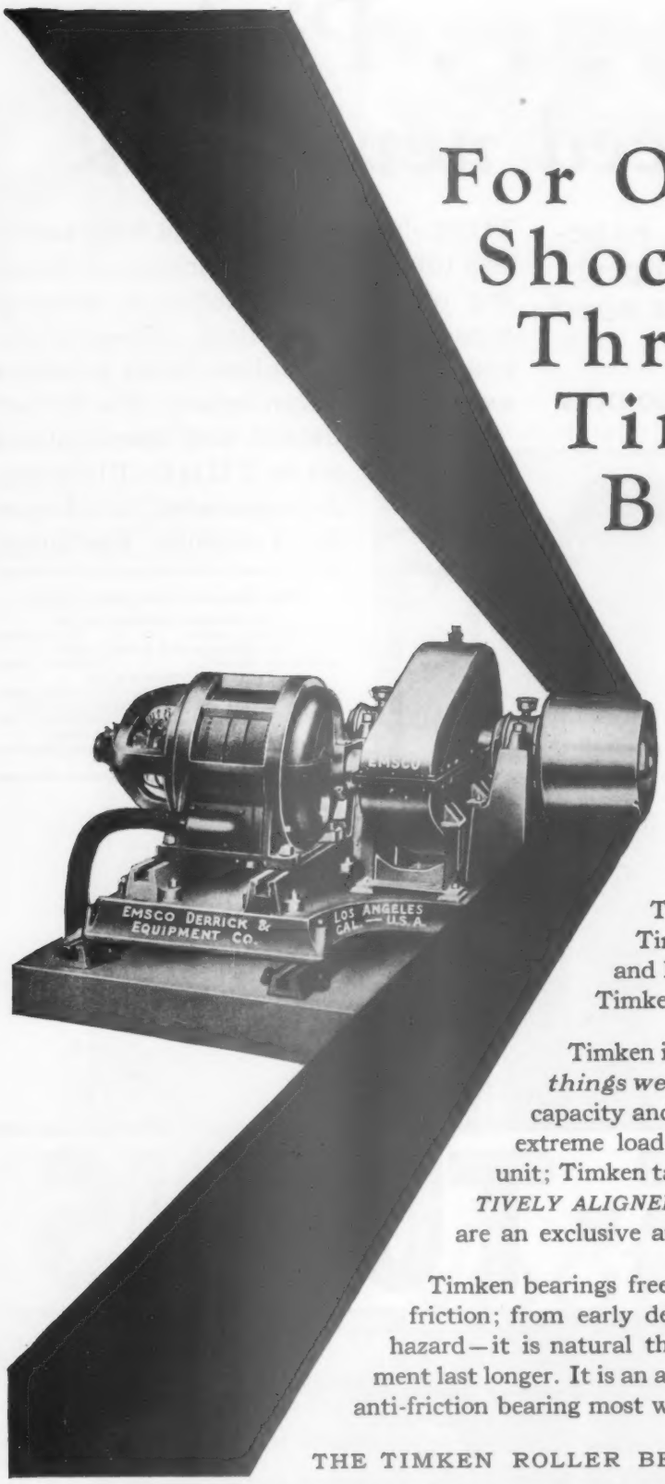
310 Union Oil Building Los Angeles, Cal.
THE HEAT AND POWER CORP.
424-426 E. Saratoga St. Baltimore, Maryland
C. E. PHILLIPS & CO.
633-639 W. Larned St. Detroit, Michigan

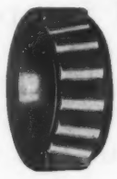


TUBE-TURNS



For Oil-Field Shock and Thrust— Timken Bearings





Emsco Derrick & Equipment Co., and many other noted designers and builders feature their Timken-equipped units.

The entire Industry has found that Timken Bearings mean lower costs and higher production—mainly due to Timken endurance and power economy.

Timken is *the one bearing that does all things well.* Timkens provide utmost radial capacity and utmost thrust capacity. Timken extreme load-carrying area is compact in one unit; Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made steel are an exclusive and self-perpetuating combination.

Timken bearings free operators from the heavy toll of friction; from early depreciation; and from breakdown hazard—it is natural that Timken Bearings make equipment last longer. It is an assurance of economy to specify the anti-friction bearing most widely used in the oil fields.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

PORTABLE and POWERFUL

Type G
Drilling Unit
Four Cylinder-85hp.

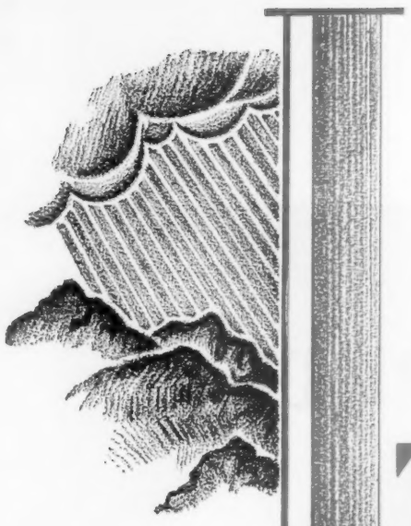
successfully adapted to cable tool drilling.

COMPLETELY self-contained and adapted for quick and easy installation—Waukesha Drilling Units not only cost less to begin with but are much cheaper to run. Either the four or six cylinder type is thoroughly suited to handle cable tools within their capacity range of 70 hp. to 120 hp.

In the field these units show all the flexibility of steam and have repeatedly proven their reliability. They run on "natural gas" or gasoline, and are particularly convenient where water is scarce. You'll want all the details, of course. Write *Oil Industry Division for Bulletin No. 721. Waukesha Motor Company, Waukesha, Wisconsin. Offices: New York—Tulsa—Houston—San Francisco.*

948

WAUKESHA ENGINES



IT ALSO MAKES BENDS IN SHORTER RADIUS

When properly placed, in the line, according to the degree of temperature change likely, the SMITHWeld Expansion Joint insures an all-welded line against parting of the field welds due to contraction and expansion. It also permits bends to be made in shorter radius than otherwise possible.

SMITH*WELDED*

A. O. SMITH CORPORATION

Oil & Gas Field Products Division

LINE PIPE

General Offices: Milwaukee, Wis.

District Offices at: New York - Tulsa - Houston - Los Angeles

A Complete Line of METRIC METERS

500B

250B

80B

60B

35B

for **HIGH-MEDIUM *and* LOW PRESSURES**

Ironcase Meters have been measuring gas accurately since 1910. Early successes led to refinements. Accumulated experience helped in the working out of basic improvements. Progress has been made consistently in designs. New sizes have made possible new and wider applications.

At present, Ironcase Meters are giving greater satisfaction than ever in almost every type of gas measuring. They present a complete range of sizes and capacities, facilitating standardization on one design for widely varying requirements.

30B

25B

20B

10B

5B

Sales Service
Westcott & Greis, Inc.
Dallas Tulsa Los Angeles

METRIC METAL WORKS
of the American Meter Company, Inc.
- ERIE - PENNSYLVANIA - U-S-A -

IRON-CASE METERS

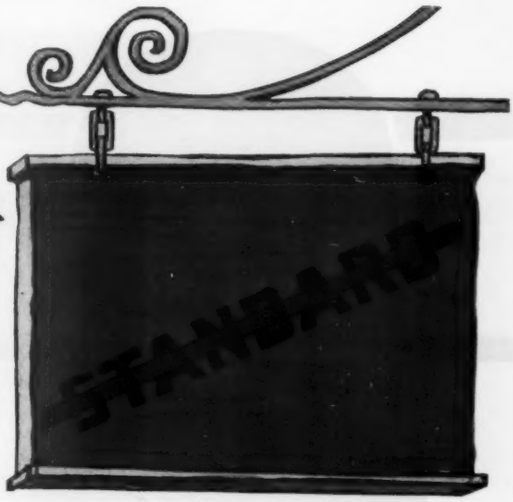
"Rolls Royce," says the radiator emblem—and what a world of meaning the message carries!

"Cementing by Halliburton," says the well's specifications, and again much is said in few words—permanent insurance against shifting formations, migration of fluids and intrusion of upper water; as long as the well is in existence, the most thorough protection that equipment, experience and engineering skill can provide.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma

DEPENDABLE
Their great lasting strength gives greatest insurance against pole breaks which interfere with the continuity of electric power supply...
The poles are strongest longest
Ample Stocks Provide Quick Shipment
International Creosoting & Construction Co.
General Offices—Galveston, Texas
Plants: Texarkana Beaumont Galveston
Distributed by GraybaR ELECTRIC COMPANY
International Poles in the Beaumont-Spindle Top Line. North of Spindle Top looking south. In service of the Gulf States Utilities Co.
International
Creosoted Yellow Pine Poles

UNIVERSALLY *proved and approved*



WELDED

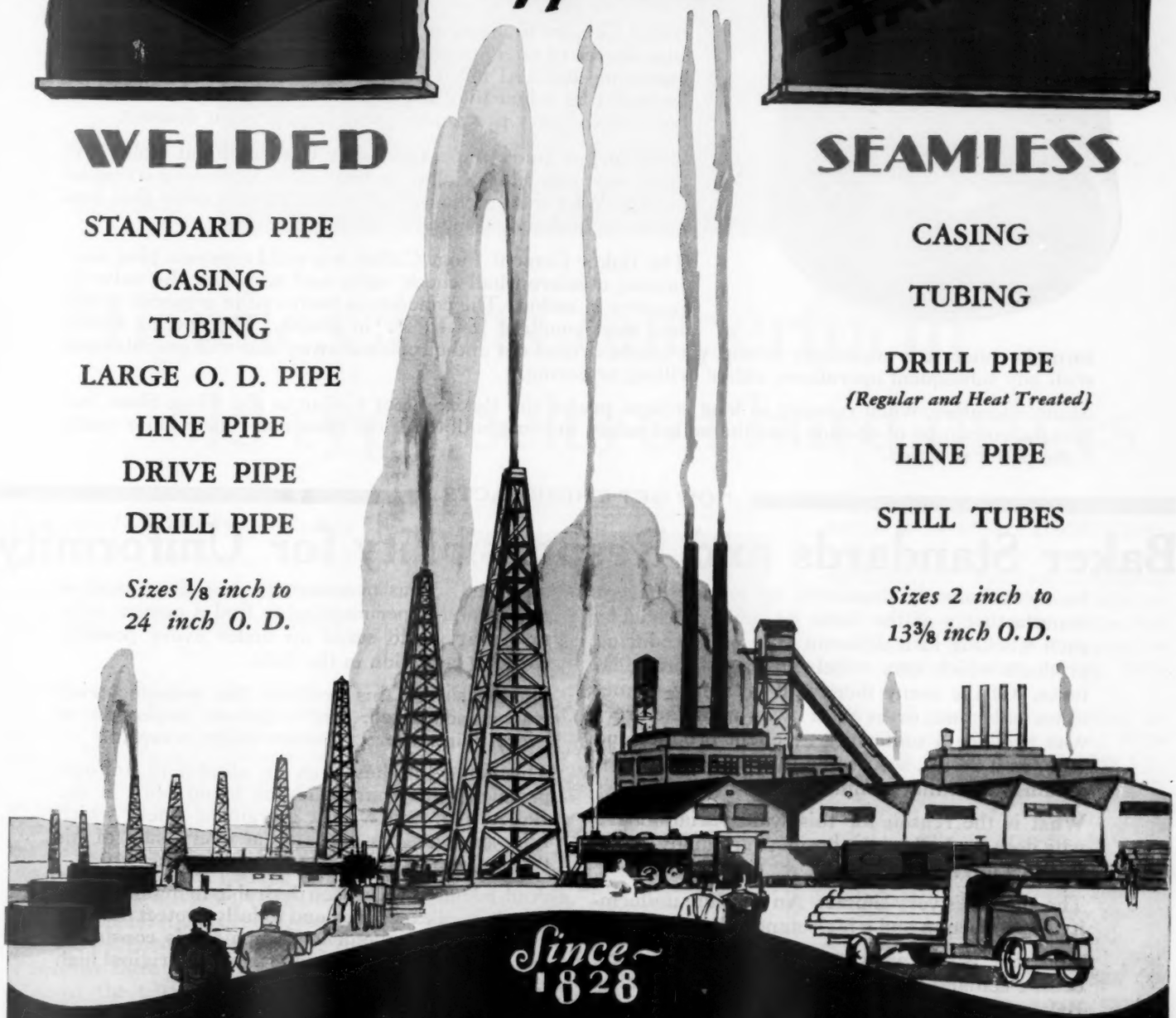
STANDARD PIPE
CASING
TUBING
LARGE O. D. PIPE
LINE PIPE
DRIVE PIPE
DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

SEAMLESS

CASING
TUBING
DRILL PIPE
(Regular and Heat Treated)
LINE PIPE
STILL TUBES

Sizes 2 inch to 13⅜ inch O.D.



Since 1828

SPANG, CHALFANT & COMPANY Inc.

PITTSBURGH, PA.

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO.
PITTSBURGH, PENNA. TULSA, OKLA. LOS ANGELES, CALIF.
Mills: ETNA, PENNA. SHARPSBURG, PENNA. AMBRIDGE, PENNA.

One Serious Accident Pays for a Lot of Baker Cement Equipment

Baker Cement Equipment was designed with the greatest possible degree of safety in mind and one reason for the constantly increasing demand for it is that operators everywhere have learned that when they use Baker Cement Equipment they have taken every precaution possible to prevent disaster.

Consider, as an example, the Baker Cement Float Collar. It takes only one Float Collar to float in an expensive string of casing. Why take a chance? Use the Float Collar that you know, beforehand, will do the job safely.

The Baker Cement Float Collar is a solid concrete plug containing a celeron ball check valve and seat, and the valve is positive in action. The concrete is anchored in a special seamless steel coupling 16″ to 18″ in length. The special Baker formula concrete is amazingly strong, yet can be drilled out and circulated away and will not interfere with any subsequent operations, either drilling or coring.

Many operators, when running in long strings, prefer the Baker Float Collar to the Float Shoe, but it is the consensus of opinion that the added safety in using both the Float Shoe and Float Collar make it the better practice.

—NOW GET THESE FACTS—

Baker Standards and Responsibility for Uniformity

In every industry there will be found different manufacturers of the same or similar products, each working in a different way and producing products which vary widely in the essential features. Of the many there will be a few—sometimes only one, or at most two—manufacturers who produce a uniformly excellent product and who, as a result, secure the bulk of the business obtainable on that commodity.

What is the reason for this wide variation and why does the bulk of the business gradually gravitate to a few?

The answer is very simple: An absolute uniformity in production and a high standard of quality.

And that is the answer, also, for the unprecedented demand for and the universal approval of Baker Cement Equipment.

Early in the manufacture of this line of equipment it was found that the formula for the cement was an extremely important element in the manufacture, and it was necessary to do a great deal of testing and experimenting to find a cement mixture that would stand up under every possible working condition in the field.

Having solved this problem, the manufacturing was standardized, with rigorous inspection at every point where variation might creep in.

The net result has been an absolutely uniform product, with characteristics found only in the Baker line, and with a margin of safety which fully protects the operator at every step of his drilling.

And, because it has been desirable to maintain this standard of excellence and to fully protect our customers, Baker Cement Equipment is constantly tested to assure a maintenance of the original high standards of quality.

Baker Cement Equipment is fully protected by Patents Nos. 1035674, 1561768, 1491915, and 1603447. Other Patents are still pending. Specify Baker and see that you get it.

Specify BAKER Cement Equipment And Be Sure You GET It!

Mid-Continent Branches
Tulsa, Oklahoma Houston, Texas

Export Sales Office
25 Broadway, New York City

BAKER
OIL TOOLS, INC.
P. O. Box L, Huntington Park, Calif.
California Branches
Coalinga, Ventura, Taft, Bakersfield

Mid-Continent Distributors
B. & A. SPECIALTY CO.
220 E. Brady St., Tulsa, Okla.
2301 Commerce St., Houston, Texas

It's Too Late to Be SORRY After You Have Lost the Hole!

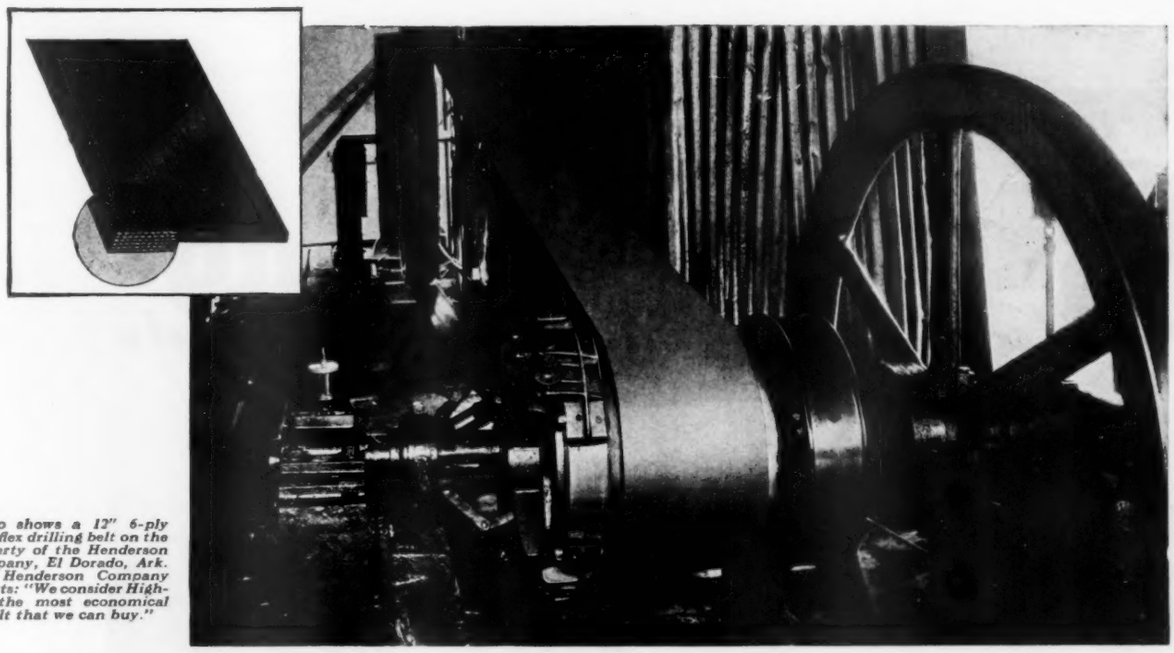


Photo shows a 12" 6-ply Highflex drilling belt on the property of the Henderson Company, El Dorado, Ark. The Henderson Company reports: "We consider Highflex the most economical belt that we can buy."

Highflex belts outperform old type belts on hard drives

Goodrich Highflex Principle does away with past methods of belt construction. Greater stamina and better resistance to abuse.

* * *

THE remarkable flexibility of Goodrich Highflex belts is the result of the radically different principle of Highflex belt construction.

The fabric, instead of being folded on itself, is laid up in individual plies, each ply terminating at the edge of the belt.

As a result, there is nothing to interfere with the uniform free action of individual plies; Highflex belts, therefore, have a greater power capacity.

Because there are no folds at the edge of the belt, Highflex belts eliminate bootlegging. Air pockets that travel lengthwise through a belt of ordinary construction, quickly escape to the edge of Highflex belts.

Highflex belts, one operator tells us, have given "fifteen months against three months with former belts on hardest drives." A driller writes that his Highflex belt is "just as good as when applied, after drilling three wells."

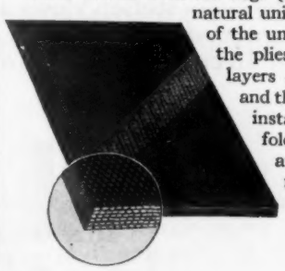
We will gladly send additional information on Highflex belts. Write to The B. F. Goodrich Rubber Co., Akron, O., or the branch nearest you.

Fig. 1

Fig. 2

You can test the* Highflex *Principle this easy way

Bend a pad of paper or booklet with the fingers. When viewed from the edge (fig. 1) it assumes a natural uniform curve because of the unhampered action of the plies. Now, if several layers of paper are folded and then bent (fig. 2) you instantly see how the fold distorts the curve and impedes the free movement of the individual layers.



* * *

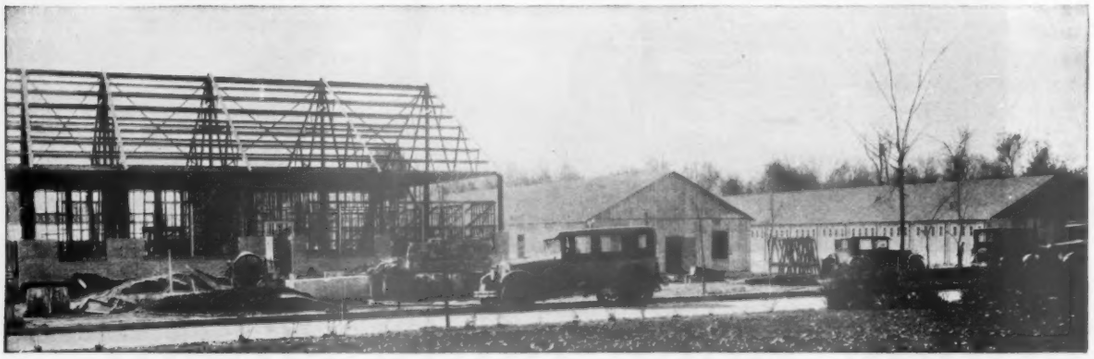
Oil Field Branches

THE B. F. GOODRICH RUBBER CO.
1201 Young St.....Dallas, Texas
2422 Broadway., Kansas City, Mo.
285 So. Peters St., New Orleans, La.

The PACIFIC GOODRICH RUBBER CO.
1386 E. 7th St., Los Angeles, Cal.
650 2nd St., San Francisco, Cal.
2625 Walnut St.....Denver, Colo.
and other principal cities

Goodrich

Steel Buildings
are adaptable to your needs



WHERE requirements call for such features as completeness, economy in acquiring, economy in maintenance, fire-safeness, speed in erection, finished appearance and structural qualities which make for permanence, yet which permit enlarging or taking down without loss of anything more than a few dropped bolts—then steel buildings—Butler Steel Buildings—are adaptable to your needs.

Engineers find available in their ready-made construction, the quick solution of urgent sheltering problems, particularly those involving operations "outpost" in character. And many other industrial and commercial undertakings are sheltered in Butler Ready-Made Buildings. Pictured above is a group of Butler Buildings at the Colorado State College. The one at the right houses the artillery unit. The center building is used for class rooms and storage. In the building to the left is shown the steel structure of the Dairy Laboratory Building. In this building partitions dividing class rooms are carried on structural steel members.

Examples of Butler design are shown in the cross section views above of a purlin and of a side wall section. By such ingenious shaping the strength of steel is multiplied throughout Butler Ready-Made Buildings. Maximum strength per pound of steel is attained.

Butler engineering service will supply you with all the detailed information needed to make a selection to fulfill your requirements—including price, if you will mention the size and type of structure in mind.

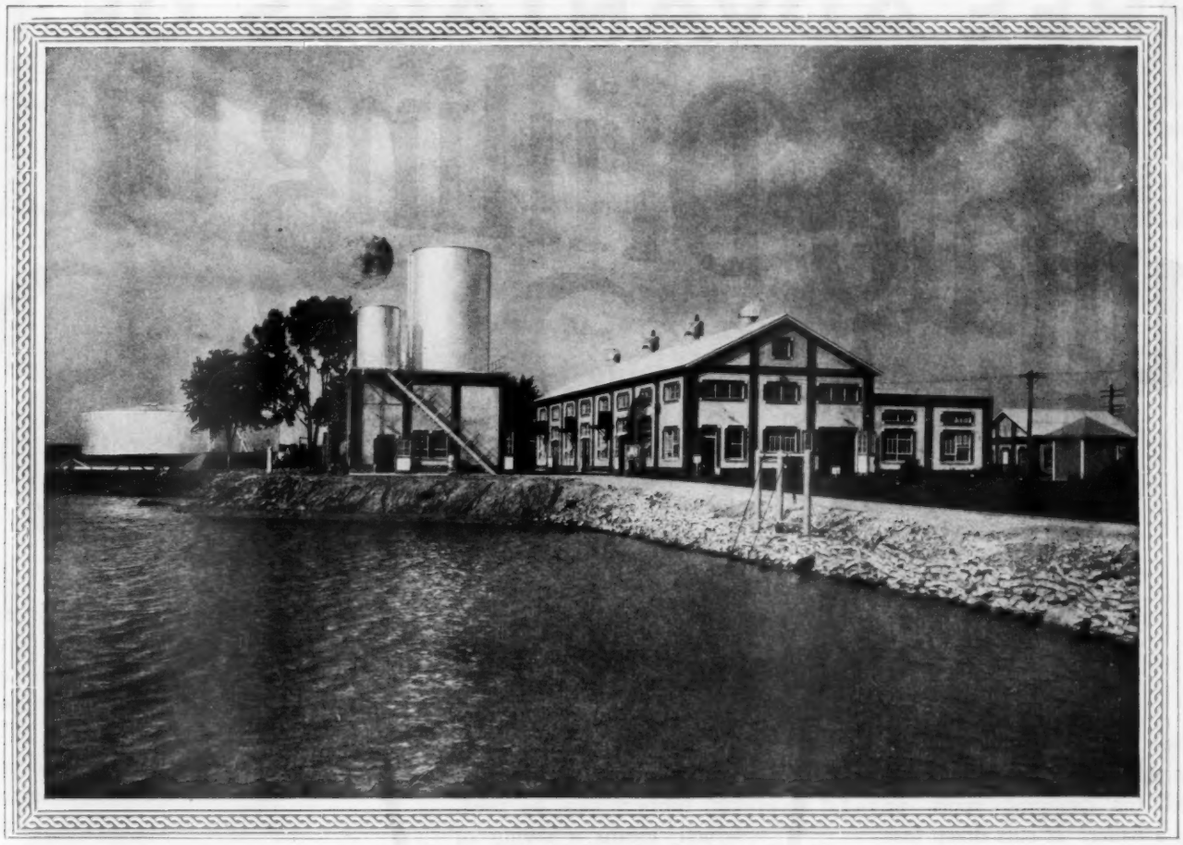
BUTLER
READY-MADE
STEEL BUILDINGS

STEEL BUTLER PRODUCTS

BUTLER MANUFACTURING COMPANY

1244 Eastern Ave. Kansas City, Mo.

944 6th Ave. S. E. Minneapolis, Minn.



Pumping Station of Prairie Pipe Line Co., Marceline, Mo.

Used by Leading Pipe Line Companies

Why do the leading pipe line companies use DEGRACO Paints? Their initial cost per gallon is higher than that of cheap paints—but for appearance and protection over a period of years DEGRACO Paints show the lowest cost per sq. ft.

For tanks, also for interior and exterior of pumping stations, manifold houses, warehouses, machine shops and employees' houses use DEGRACO Paints.

DEGRACO PAINTS
All Colors for All Purposes

Note: The Detroit Graphite Company maintains a cooperative Engineering Staff to aid in the selection and application of the paint best suited to your needs. Let our nearest representative give you sound recommendations on any paint problems.

Detroit Graphite Company

Branch Offices and Warehouse Stocks in All Principal Centers.

Detroit, U. S. A.

Manufactured in Canada by Dominion Paint Works, Ltd., Walkerville.

THREE ADVANTAGES OF THE Buffalo Drilling Unit

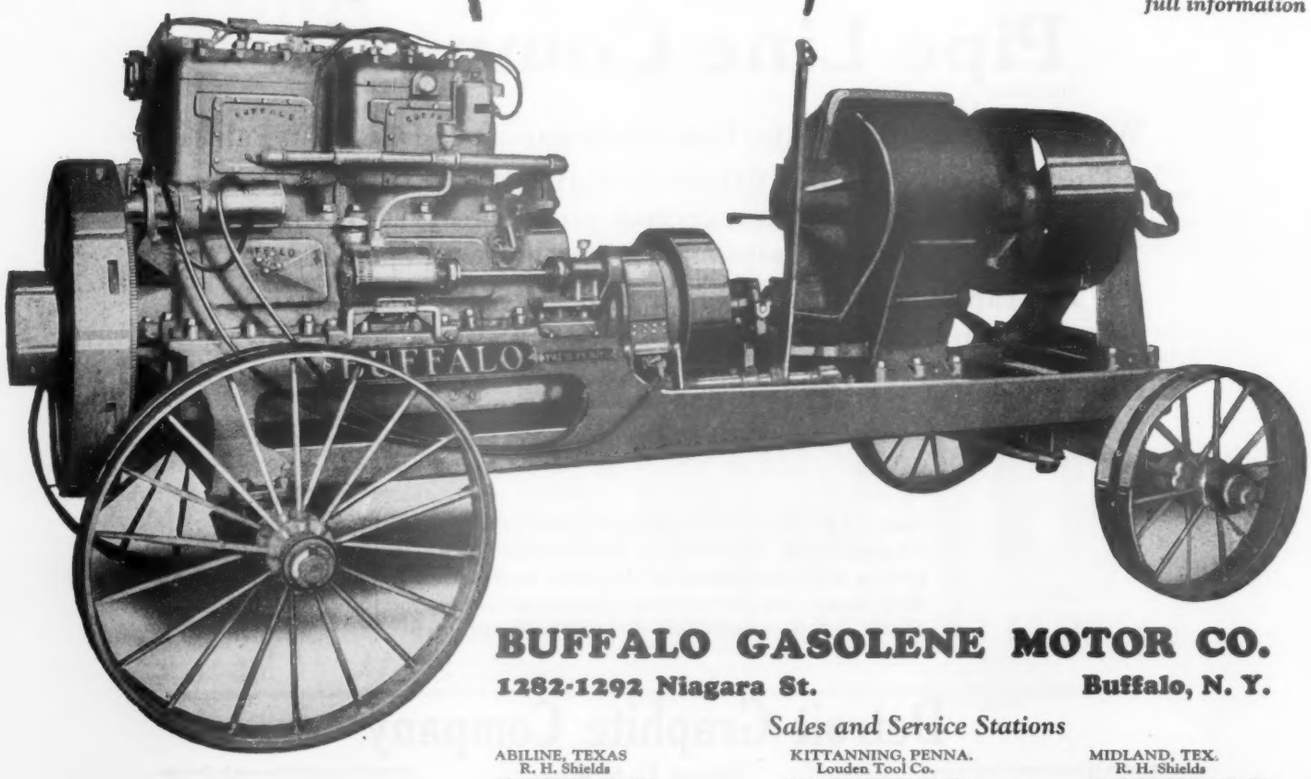
1 2 3

The Buffalo Drilling Unit reduces operating costs. It is unequalled for dropping tools or pulling a bailer. It cuts down lost time due to breakdowns. Low fuel cost—it operates on natural gas or gasolene.

It is easy to move—all in one unit, solid cast steel frame. It can be rigged up in one hour, requires no special setting form. Old rig timbers can be used, which means a saving of $40 to $100 per well.

The "PB" model is equipped with two-speed transmission. Under normal operation the engine drives the belt pulley through the standard gear reduction of 2.68 to 1, but by simply operating a lever the low speed gear reduction of 5 to 1 is brought into action. It gives you reserve power for the hard pulls.

Write today for full information



BUFFALO GASOLENE MOTOR CO.

1282-1292 Niagara St. Buffalo, N. Y.

Sales and Service Stations

ABILINE, TEXAS
R. H. Shields
BRADFORD, PENNA.
R. R. Reck
EL DORADO, KANS.
R. H. Shields
KITTANNING, PENNA.
Louden Tool Co.
MANNINGTON, W. VA.
The Prichard Supply Co.
McCAMEY, TEX.
R. H. Shields
MIDLAND, TEX.
R. H. Shields
PARKERSBURG, W. VA.
Parkersburg Rig & Reel Co.
WAYNESBURG, PENNA.
The Prichard Supply Co.

And THERE IS NO SECOND..

IN every field of endeavor there is an outstanding performer. Individual or product, one leads, the others follow.

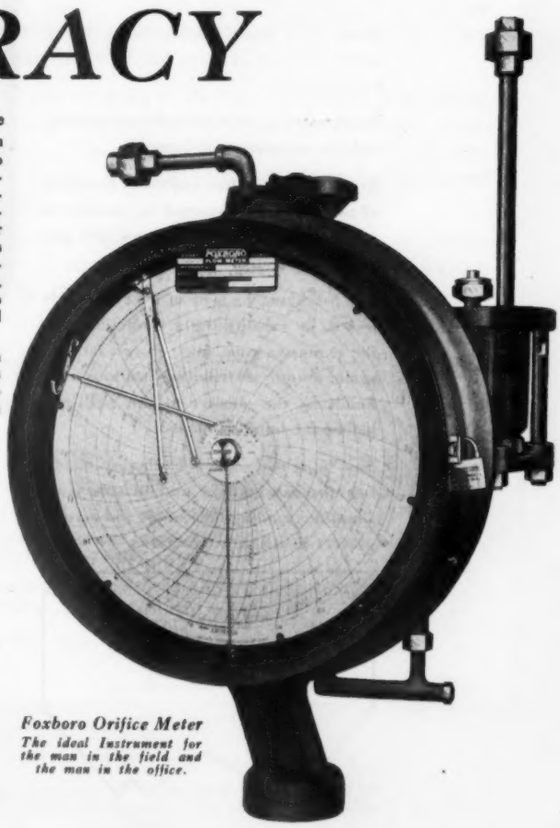
In the oil and gas industry it's the Foxboro Orifice Meter. No Instrument for measuring flow can match its amazing record of sales. None approaches its consistent performance.

For those who demand the *most*, there is only one Orifice Meter—Foxboro.

ACCURACY

ACCURACY is and always will be the foremost consideration in selecting an Instrument to measure flow. And Foxboro offers the only Orifice Meter without inherent error. Uniform float motion is translated into uniform pen travel by the segmental lever. Thus angularity—the bugbear of most meters—is eliminated. Accuracy is built in at the factory. Accuracy is maintained in the field. No calibration is needed. No trouble with dirt. The meter is easy to read, easy to clean, easy to zero, easy and economical to maintain.

Investigate the Orifice Meter that has won the unqualified endorsement of leading gas and oil engineers. Let the nearest Foxboro branch office show where it will save you money. Write or wire.



Foxboro Orifice Meter
The ideal Instrument for the man in the field and the man in the office.

THE FOXBORO COMPANY
Neponset Avenue, Foxboro, Mass., U. S. A.
28 North Guthrie Ave., Tulsa, Okla.
Magnolia Building, Dallas, Texas
J. E. Treacy, Strada Golesti No. 9, Ploesti, Roumania

New York Chicago Boston Philadelphia
Pittsburgh Cleveland Rochester, N. Y. Atlanta
Los Angeles San Francisco Portland, Ore.
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FOXBORO
Reg. U. S. Pat. Off.
THE COMPASS OF INDUSTRY

Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

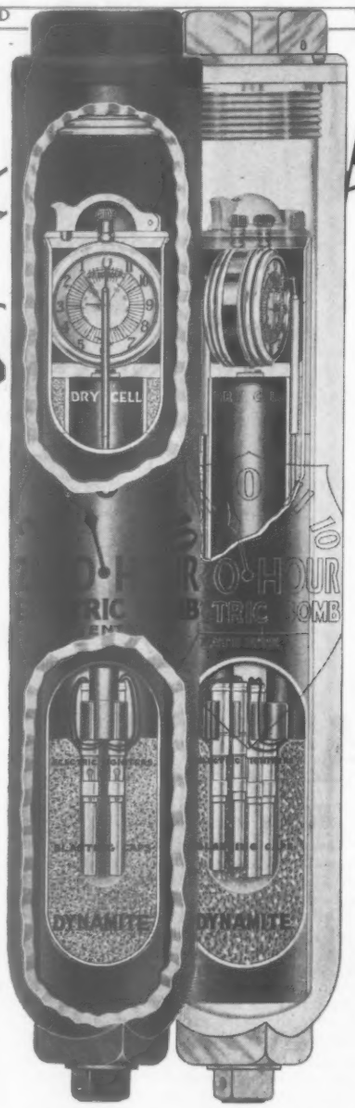
THE ONLY BOMB BETTER THAN A ZERO HOUR BOMB IS TWO ZERO HOUR BOMBS ... AND THAT'S THE ZERO HOUR DUPLEX

SUPER-DEPEND ABLE ..

.. this new

Zero DUPLEX Hour Electric Bomb

Plug and Socket Connectors ... Improved Firing Pin



When you take a bomb that has previously proven 98% perfect and duplicate it, in the same container, you have a bomb that, compared with the former bomb, is $99\frac{24}{100}\%$ perfect. It is a fact that the chances of the new Zero Hour Duplex Bomb's failure to operate are so small that they are almost beyond computation in ordinary mathematics. To this extent, also, are eliminated dangerous cleaning-out jobs, over buried shots, with their attendant loss of production and burden of expense. The Zero Hour Duplex Bomb brings to oil well shooting such a perfect, modern detonating device that all other methods are rendered at once obsolete, and more costly and hazardous to your investment, by the risk entailed in using them. We are of the profound belief that no more perfect detonating device has ever been devised.

Zero Hour Bombs are obtainable through all principal torpedo companies

Every Zero Hour Duplex Bomb has a safety interval of from one to twenty-two hours.

Every watch is given several days running test, for accurate time-keeping.

Every electric igniter and every assembly of two igniters, connected in parallel to connector plug, at our factory, are galvanometer tested.

The firing mechanism of every bomb is tested, by substituting a flashlight bulb for explosive caps, first, at our factory, again at our distributing stations and, finally by the shooter at the well, just before the bomb is loaded.

New "plug and socket" method of attaching electric igniters and blasting caps simplifies loading operations and assures perfect electrical connections.

Nearly 7,000 Zero Hour Bombs have been used. Not one has fired before the time for which it was set.

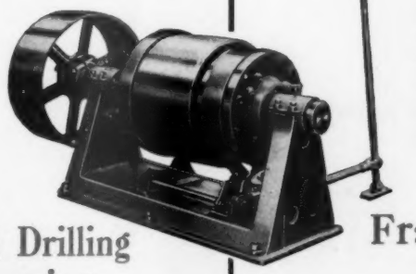
Zero Hour Electric Bomb

THE ZERO HOUR TORPEDO CO., 408 COSDEN BLDG., TULSA, OKLAHOMA

Franklin Valveless Oil and Gas Engines

Some of the Franklin OF Good Points

Enclosed type.
Simplicity.
Low fuel consumption.
No special tools required.
No special threads used.
Extremely heavy crank.
Counterbalance on crank.
Hollow crosshead pin fitted with crosshead on a taper.
Metallic Packing on piston rod.
Removable shells in all bearings.
Very accessible.
Steel crosshead with adjustable bronze shoes.
Piston rod flanged and bolted to piston.
Air cooled piston.
Cylinder head jacket easily cleaned.
Cylinder has three point force feed lubrication.
Most economical to operate in fuel, lubricant, water and repairs.
Easy starting.
Least number of parts.



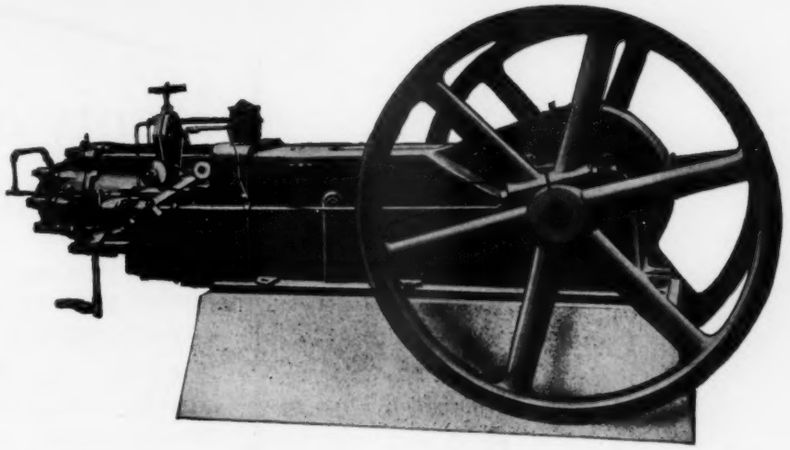
Type BG Clutch for Cable Tool Drilling or Pumping

A vast improvement over the former type of clutches.

Driven from pulley on engine. Permits the use of a larger diameter pulley and makes possible a slower clutch speed. Operates by hand lever on derrick.

Construction and design prevent Reverse Clutch Troubles.

PRICE—$1200.00 F.O.B. Franklin, Penna.



The A.P.I. Demanded Standardization Franklin Engines Give It

We believe standardization means economy—in both money and effort.

In the new and improved Franklin Oil Engine, identified as Type OF, each of its three sizes are made interchangeable as to foundation. Finish with the drilling engine—then move in the smaller pumper without changing so much as a bolt hole.

All Franklin Valveless 16″ stroke engines are interchangeable on the same block.

No loss of time, expense of new block or trouble. Practical economy for the operator—sufficient certainty to specify to the drilling contractor that he drill with a Franklin.

Even without this feature, advantageous as it is, the Franklin Valveless Engine stands as an achievement in performance, simplicity and economy. Operators who have seen this new type OF believe it to be an unusual advance in Internal Combustion Engines.

Where gas as fuel is available, specify Type OG. Incidentally, the OF Engine is readily converted into this OG type at very little trouble or expense.

Franklin Valveless Engine Company
Franklin, Penna.

PRICES

12 x 16 Type OF Franklin, including water circulating pump and pulley. *$1550 F.O.B. Franklin*

13 x 16 Type OF Franklin, including water circulating pump and pulley. *$2050 F.O.B. Franklin*

16 x 16 Type OF Franklin, including water circulating pump and pulley and air starting equipment. *$3200 F.O.B. Franklin*

NOTE—Type OF is readily converted into type OG for gas fuelization.

Distributed by

OIL WELL SUPPLY COMPANY

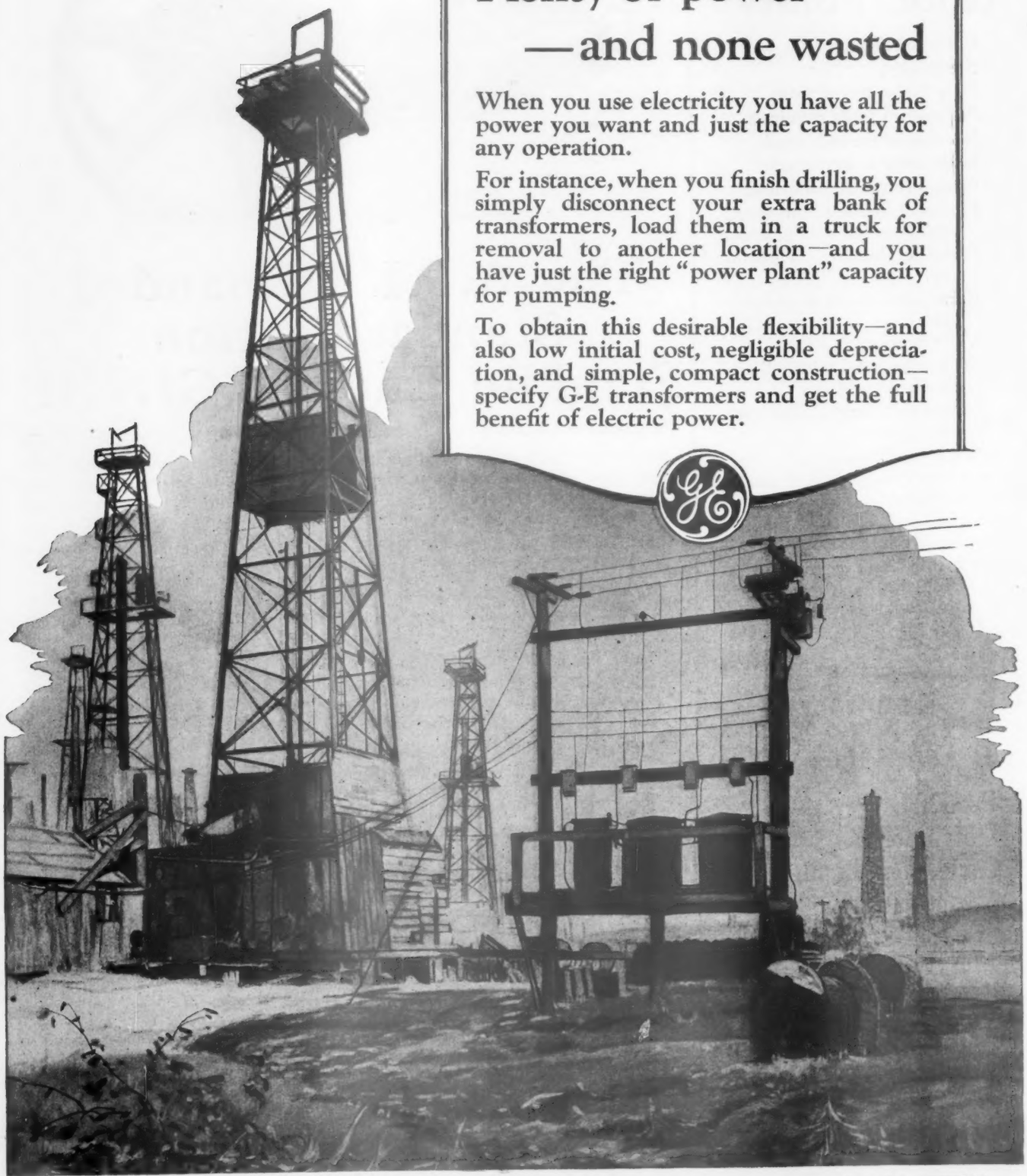
Branches in All Oil Fields

Plenty of power —and none wasted

When you use electricity you have all the power you want and just the capacity for any operation.

For instance, when you finish drilling, you simply disconnect your extra bank of transformers, load them in a truck for removal to another location—and you have just the right "power plant" capacity for pumping.

To obtain this desirable flexibility—and also low initial cost, negligible depreciation, and simple, compact construction—specify G-E transformers and get the full benefit of electric power.



JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY AT 8 P.M., E.S.T. ON A NATION-WIDE N.B.C. NETWORK

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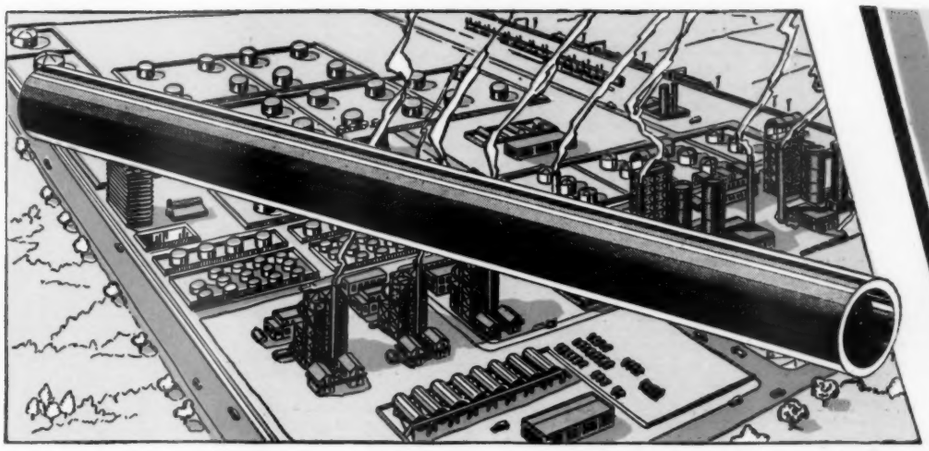
GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES



ENDURO KA2

High resistance to Oxidation in continuous service at High Temperatures

IN designing equipment for operation at high temperatures an increase in the metal thickness to compensate for oxidation losses has heretofore been necessary.

This unique characteristic of Enduro KA2, combined with its high strength and high corrosion resistance, assures long, economical operation in many classes of service.

Now, due to the superior oxidation resistance of Enduro KA2, processed in accordance with Krupp specifications, no increase in the metal thickness need be allowed.

Metallurgists of the companies below will be glad to discuss Enduro KA2 with you and suggest many applications where this new chrome-nickel-alloy can be used to advantage.

ENDURO
NIROSTA
KA2 STEEL

CENTRAL ALLOY STEEL CORP.
Massillon and Canton, Ohio

LUDLUM STEEL CO.
Watervliet, N. Y.

THE BABCOCK & WILCOX TUBE CO.
85 Liberty St., New York, N. Y.

OXIDATION RESISTANCE OF ENDURO KA2

THE superior oxidation resistance of Enduro KA2 is indicated by the following comparative test run on samples of similar size in an electric muffle furnace in an oxidizing atmosphere.

The figures give the per cent loss in weight in twelve hours obtained by removal of scale formed on pickling in neutral ammonium citrate solution.

A new booklet is ready containing complete information relative to the applications of Enduro KA2 for high temperature service. Send for a copy.

Comparative Oxidation Resistance of Enduro KA2 and Low Carbon Steel at Elevated Temperatures

	1600° F.	1700° F.
Steel	7.68%	9.75%
Enduro KA2 .	.44%	.53%

Enduro Nirosta KA2 Available in

Plates • Sheets • Bars • Strips
Forging Blanks • Shapes
Seamless Pipe and Tubing
Welding Rods • Castings • Wire

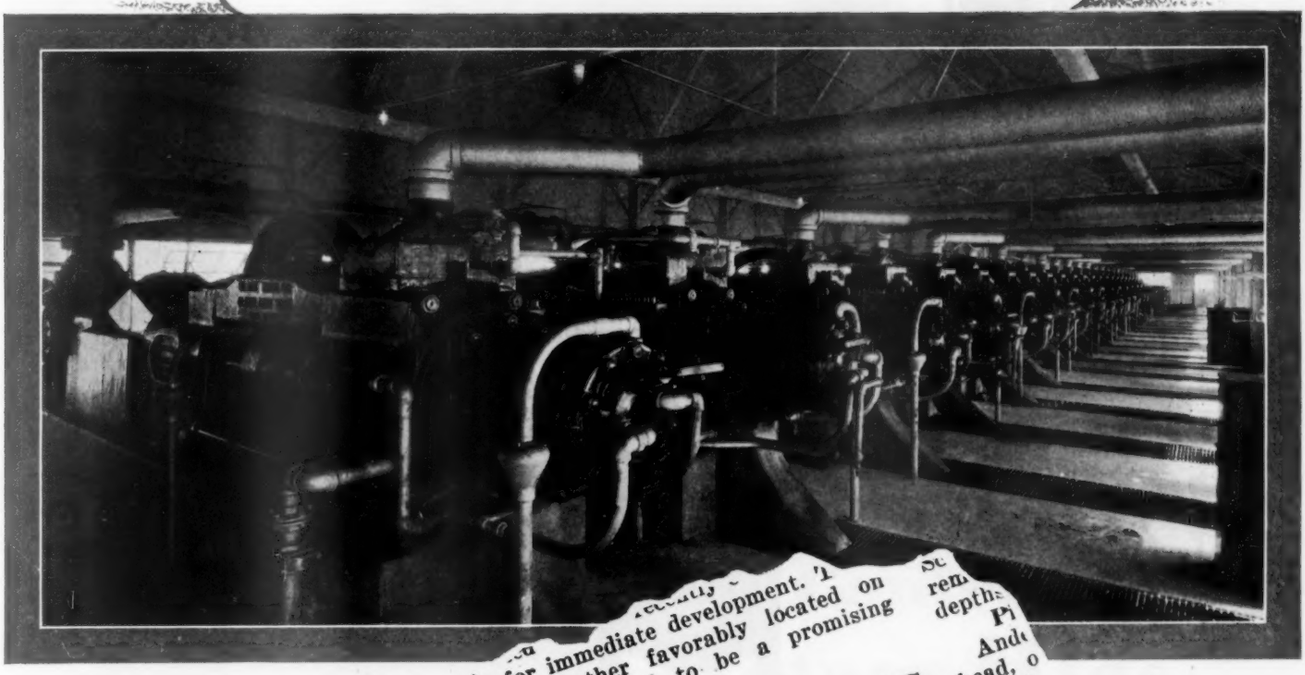
ENDURO NIROSTA KA2 STEEL

CENTRAL ALLOY STEEL CORP.
Massillon and Canton, Ohio

LUDLUM STEEL CO.
Watervliet, N. Y.

THE BABCOCK & WILCOX TUBE CO.
85 Liberty St., New York, N. Y.

Is This "News" to You?



a deal for immediate development. The leases are rather favorably located on what is considered to be a promising structure.

CLARK DOUBLE-ACTING ENGINES SAVE LOTS OF MONEY

Important Savings per H. P. Effected in Engine, Foundations, Transportation, Buildings, etc.

The CLARK Double Acting Engine secures a driving impulse in both directions of cross head travel for every revolution—thus it obviously reduces the investment cost per h. p. for Engine, Foundations, Freight and Hauling, Buildings, and Piping for both power and compressor needs. Operators also find that this machine, built on the famous CLARK "Super 2" principle, effects maximum maintenance economy and saves one-third the fuel required by the ordinary 2-cycle engine. Double Acting Engine is made in H. P. types. It has achieved because of the stamina

Compressors and Gas Engines

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Artesia, N. M.
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Smith, Booth, Usher Company
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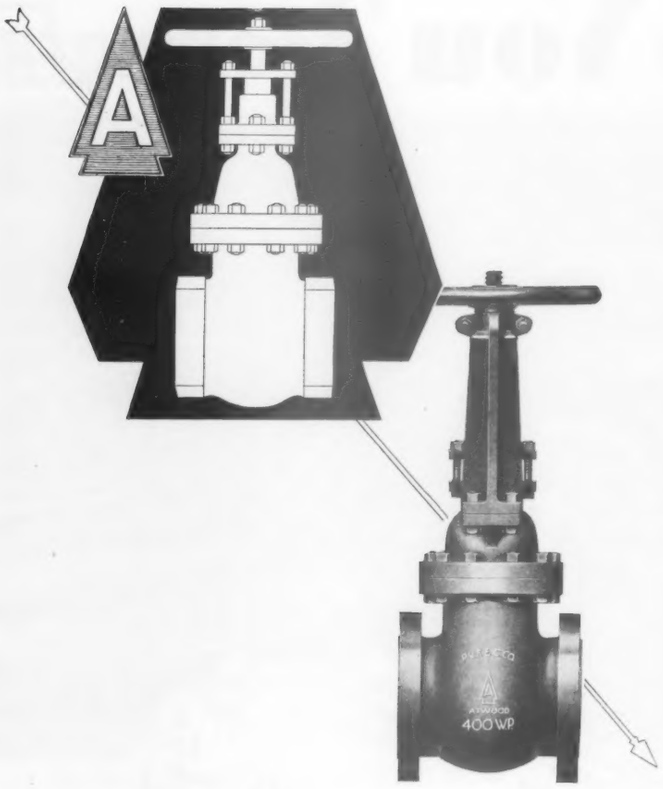
Los Angeles

CLARK

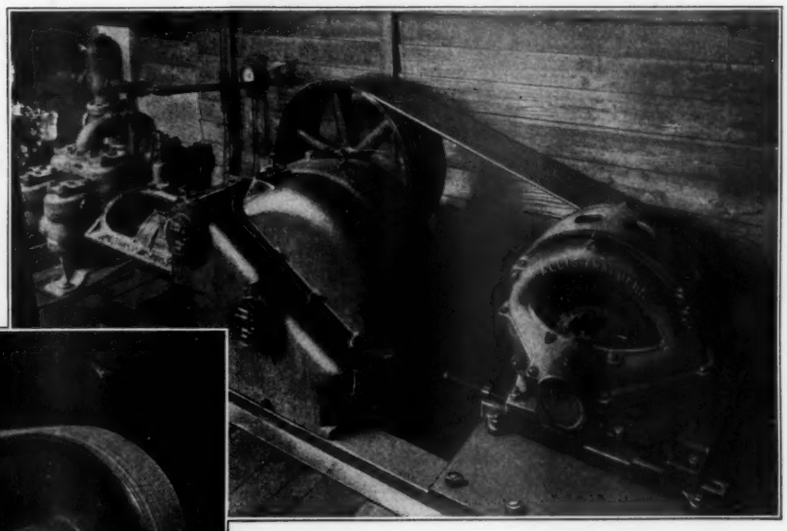


An Atwood Steel Valve for moderate pressures that will give dependable service through the extremes of expansion and contraction in oil and gas line piping. ° ° ° ° °
All Atwood Valves are tested to double rated working pressure.

ATWOOD

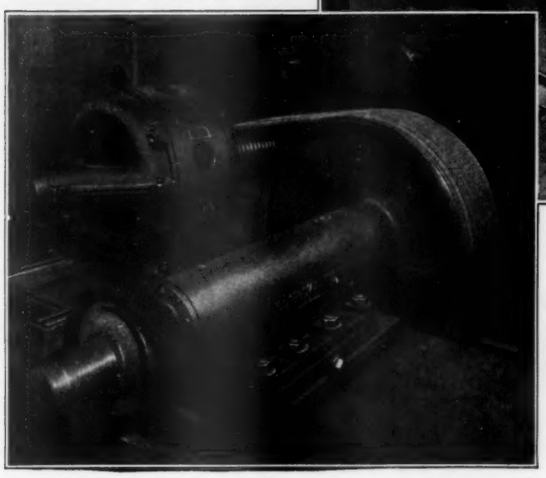
VALVES
FITTINGS
PIPING

MANUFACTURED BY
The Pittsburgh Valve, Foundry & Construction Co.
Offices in: NEW YORK, 30 Church Street
DALLAS, TEXAS, 1314 Southwestern Life Building — TULSA, OKLA., 504 Alexander Building — HOUSTON, TEXAS, 1400 Conti Street



150 h.p. Allis-Chalmers Variable Speed Motor driving Slush Pump through Texrope Drive.

150 h.p. Allis-Chalmers Rotary Drilling Motor and Control driving Draw Works and Table through Texrope Speed Reducer.



Motors, Drives *and* Control *for* Rotary Rigs

Special motors and improved variable speed controls have led an increasing number of drilling contractors and oil operators to look to electricity as a means of decreasing their drilling costs.

Allis-Chalmers builds transformers, motors and controls for both cable and rotary drilling rigs. Special drilling motors have been developed with enclosed slip-rings and drip-proof frames as protection against splashing water or corrosive gases. Allis-Chalmers control equipment is completely assembled, wired and mounted on skids for easy handling. Rotary control consists of full magnetic type with predetermined acceleration or semi-magnetic type with drum control for speed regulation. Slush pump controls are of the semi-magnetic type.

Texrope units furnish the necessary speed reduction from the motor to the draw works. Texropes are flexible and furnish a shock absorbing medium between the motor and the drive chain or clutches. They are widely used as slush pump drives — operating on close centers without slipping and protecting the motor from shocks.

Write your nearest oil field office for detailed information on Allis-Chalmers oil field equipment. Stocks carried at Tulsa, Houston, Sweetwater, and Los Angeles.

ALLIS-CHALMERS MANUFACTURING CO., MILWAUKEE, WIS.

ALLIS-CHALMERS MOTORS *and* TEXROPE DRIVES

Products for the Oil Industry

Single and Double Reduction Units
Texrope Drives
Motors and Control
Drilling-Pumping-Pipeline
Transformers
Centrifugal Pumps
Pipe Line Pumps

OIL FIELD OFFICES

DALLAS
HOUSTON
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KANSAS CITY
DENVER
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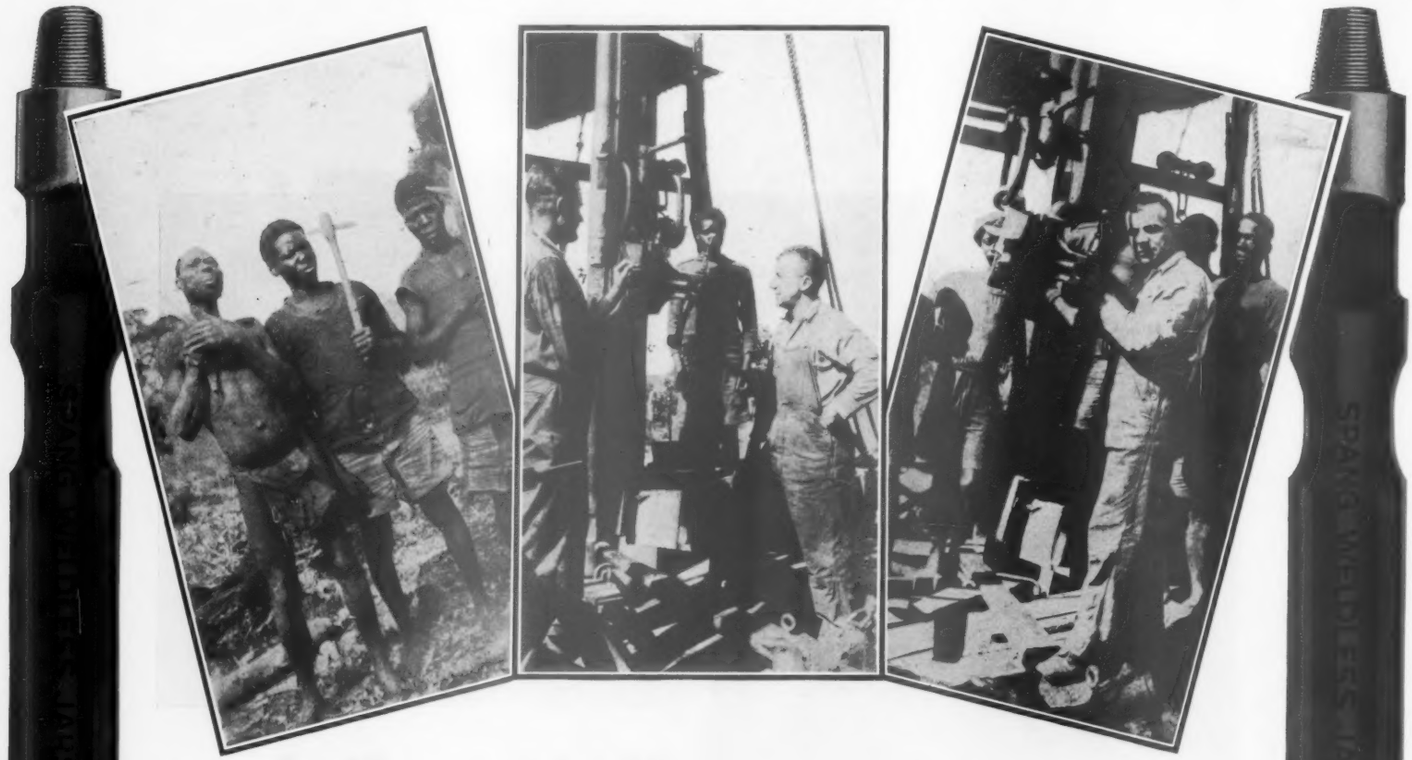
WESTERN SUPPLY CO., Tulsa
WESCO SUPPLY CO.
Los Angeles



In Africa, too

"*The* HIGHER STANDARD"

Drillers in Africa have the same advantage as drillers in America—they drill and fish with Spang Weldless Jars. With Jars so tough and strong and safe, making hole is swift, sure, economical. The absence of welds means an absence of trouble.

A Spang Wire Line Clamp is also being used by this crew and their dusky helpers.

Spang Weldless Jars are standard equipment in all fields, domestic and foreign. Over 300 leading Supply Stores carry them in stock.

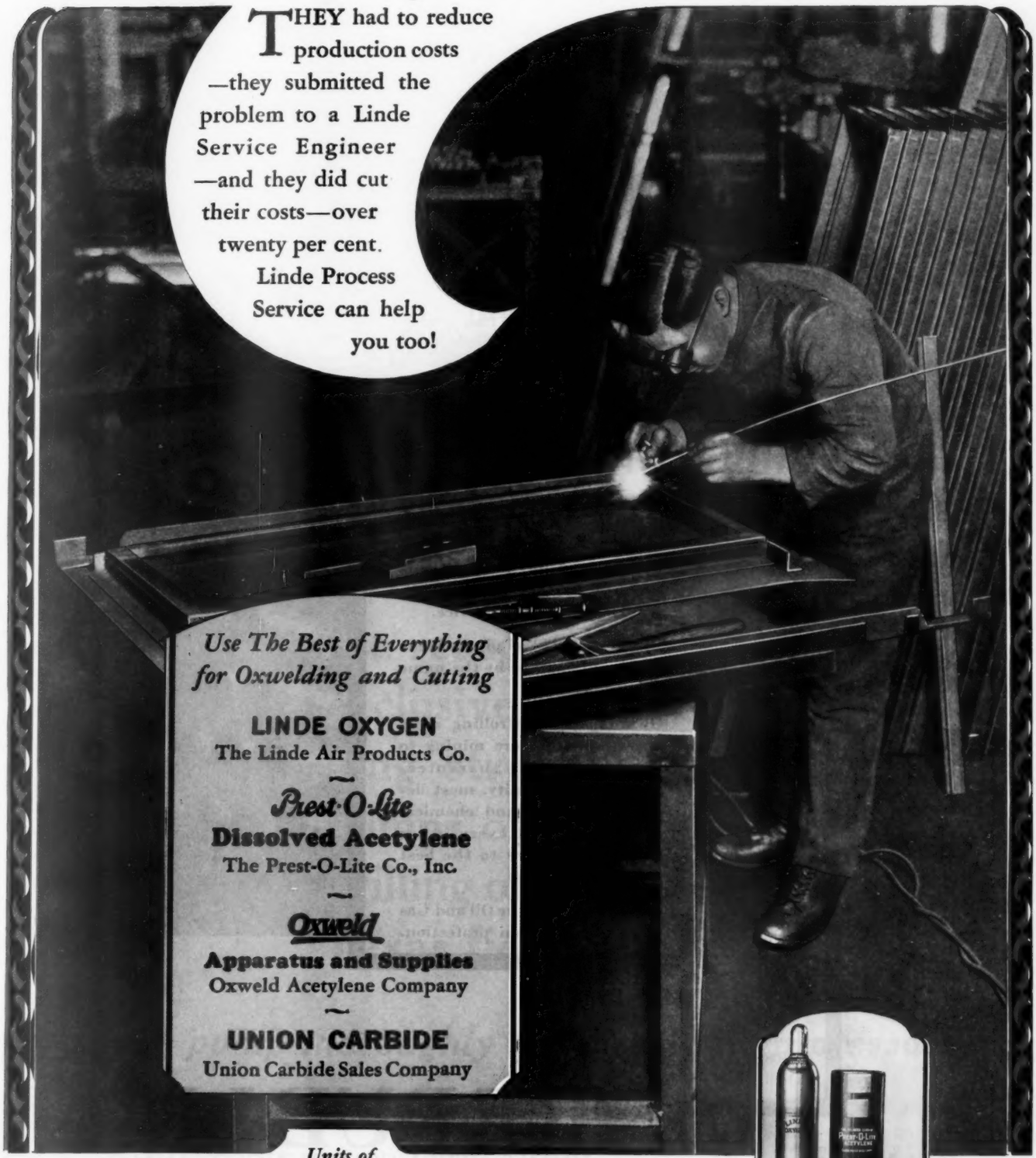
SPANG & COMPANY
BUTLER, PA.

SPANG

THE HIGHER STANDARD

WELDLESS JARS

—and they did cut their costs!


THEY had to reduce production costs —they submitted the problem to a Linde Service Engineer —and they did cut their costs—over twenty per cent. Linde Process Service can help you too!
Use The Best of Everything for Oxwelding and Cutting
LINDE OXYGEN
The Linde Air Products Co.
Prest-O-Lite
Dissolved Acetylene
The Prest-O-Lite Co., Inc.
Oxweld
Apparatus and Supplies
Oxweld Acetylene Company
UNION CARBIDE
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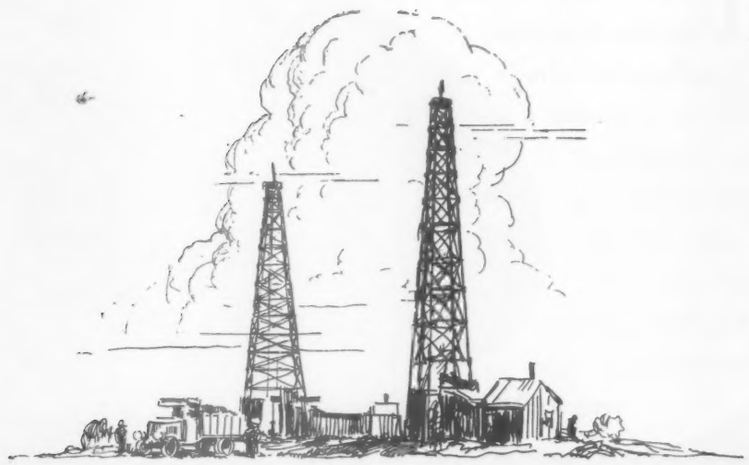
Units of

UNION CARBIDE AND CARBON CORPORATION

General Offices UCC *Sales Offices*

30 East 42nd Street, New York, N. Y. In principal cities of the country

64 Linde Plants—45 Prest-O-Lite Plants—154 Oxygen Warehouse Stocks—138 Acetylene Warehouse Stocks—38 Apparatus Warehouse Stocks —235 Carbide Warehouse Stocks



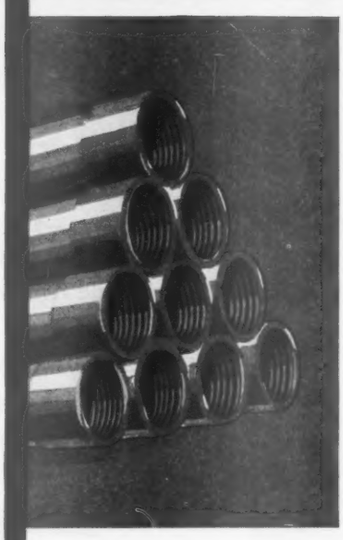
REPUBLIC PIPE IS PROTECTION!

WHEREVER Republic Steel Pipe is used, and for whatever purpose, there is a surety of safe, trouble-free, lasting service.

Because good steel pipe is identified and guarded by the name "Republic."

Owning and controlling every operation, from ore mining to completed pipe, guarantees strength, uniformity, most desirable physical and chemical properties and every other quality necessary to the best modern steel pipe.

Republic Pipe in the Oil and Gas fields is production protection.



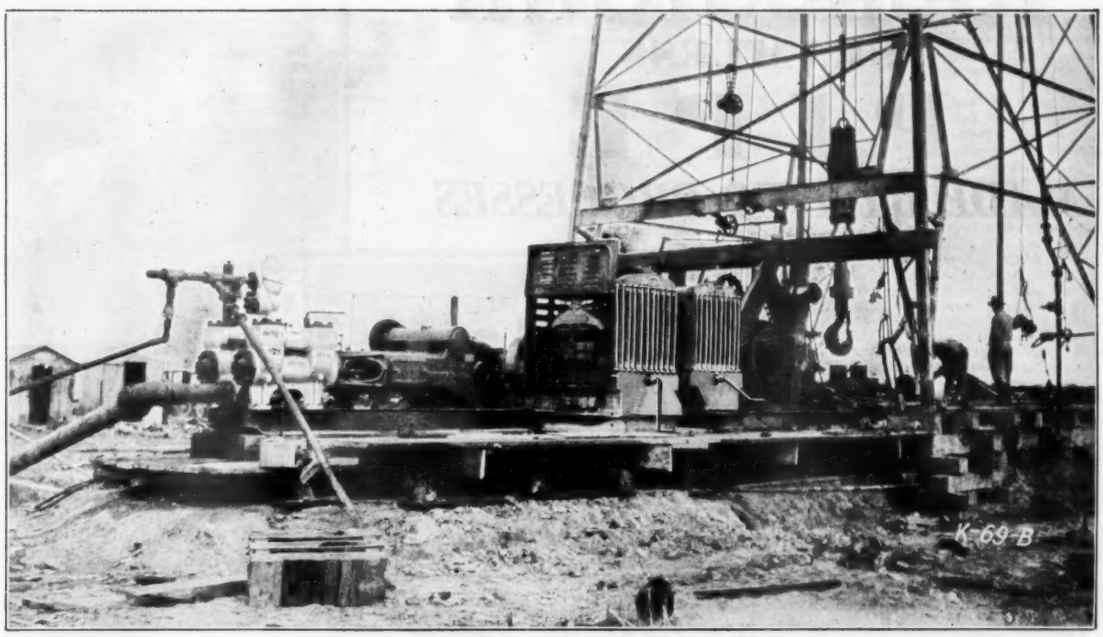
Tubing
Casing
Line and
Rotary
Drill Pipe

Branch Offices

Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, El Paso, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis

REPUBLIC
IRON & STEEL CO. YOUNGSTOWN O.
PIPE & CASING

Reliability and Lower drilling costs—



the reasons for the exclusive use of W-S long stroke slush pumps on all deep drilling of an entire Texas field!

Every pump thoroughly tested with high pressures before shipment.

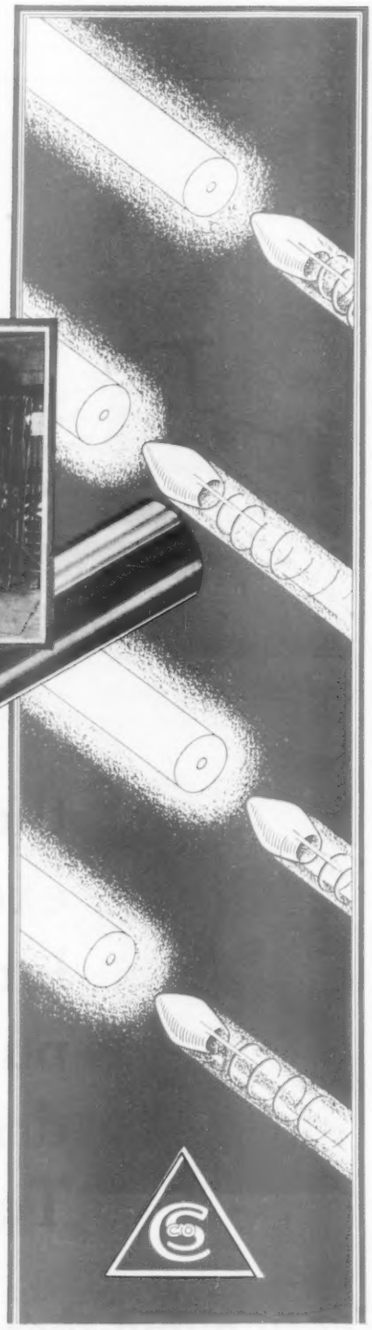
WILSON-SNYDER

BUILDERS OF HEAVY DUTY PUMPS FOR OVER FIFTY YEARS

PITTSBURGH, PA U.S.A.

YOUNGSTOWN
SEAMLESS
PIPE
MADE BY TWO PROCESSES

Two views of Youngstown Automatic Seamless Mill



Years of research and study convinced the Youngstown Sheet and Tube Company that the automatic process of making Seamless Pipe was peculiarly adapted to some sizes and Pilger process to other sizes. As a result two mills were built which is another reason why all "Youngstown Pipe is Good Pipe".

"If Continental Sells It . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY
General Offices: ST. LOUIS. *Export Offices:* 74 TRINITY COURT, NEW YORK
London Offices: 316-17 DASHWOOD HOUSE, OLD BROAD STREET, E. C. 2

THE CONTINENTAL SUPPLY CO., Ltd.
411 LANCASTER BLDG., CALGARY, ALBERTA, CANADA

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Quick Enforcement of Law Chief Hope

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

Enormous Production in California May Result in Making Effective Before August 18 Provisions of Gas Measure

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

Developments in California overshadow everything else in the petroleum industry at this time and probably will continue to exert the greatest influence during the remainder of this year at least. While conditions throughout the rest of the country are fairly good, the vast overproduction in California cannot help but have a depressing effect upon the situation in the Mid Continent and Eastern territories.

Removal of all restrictions on drilling and producing in the different areas of California, except at Kettleman Hills, may result either in a reduction in the posted crude oil price schedule in California or an earlier enforcement of the natural gas conservation law, which, it had been planned to make effective August 18. California markets cannot absorb the enormous production now being obtained in that State. Many companies are not in position to increase their storage to any great extent. Consequently, it is logical to expect a greater quantity of crude oil and gasoline will be shipped from California to the Atlantic Seaboard, resulting, probably, in a backing up of crude and gasoline from the Mid-Continent and Eastern sections.

Gasoline shipments from California already have been increased very materially and this gasoline is making inroads in the Eastern markets. Crude oil shipments may be expected to gain in volume as the big flood of high gravity crude from the flush areas of California are thrown on the market there.

Conditions in the Mid-Continent would warrant a price increase were it not for the California menace. Crude is being withdrawn from storage in Oklahoma and Kansas at the rate of 45,000 barrels daily and production in West Texas is below the demands in that area, approximately 9,000 barrels daily having been withdrawn from storage there during the past two or three weeks.

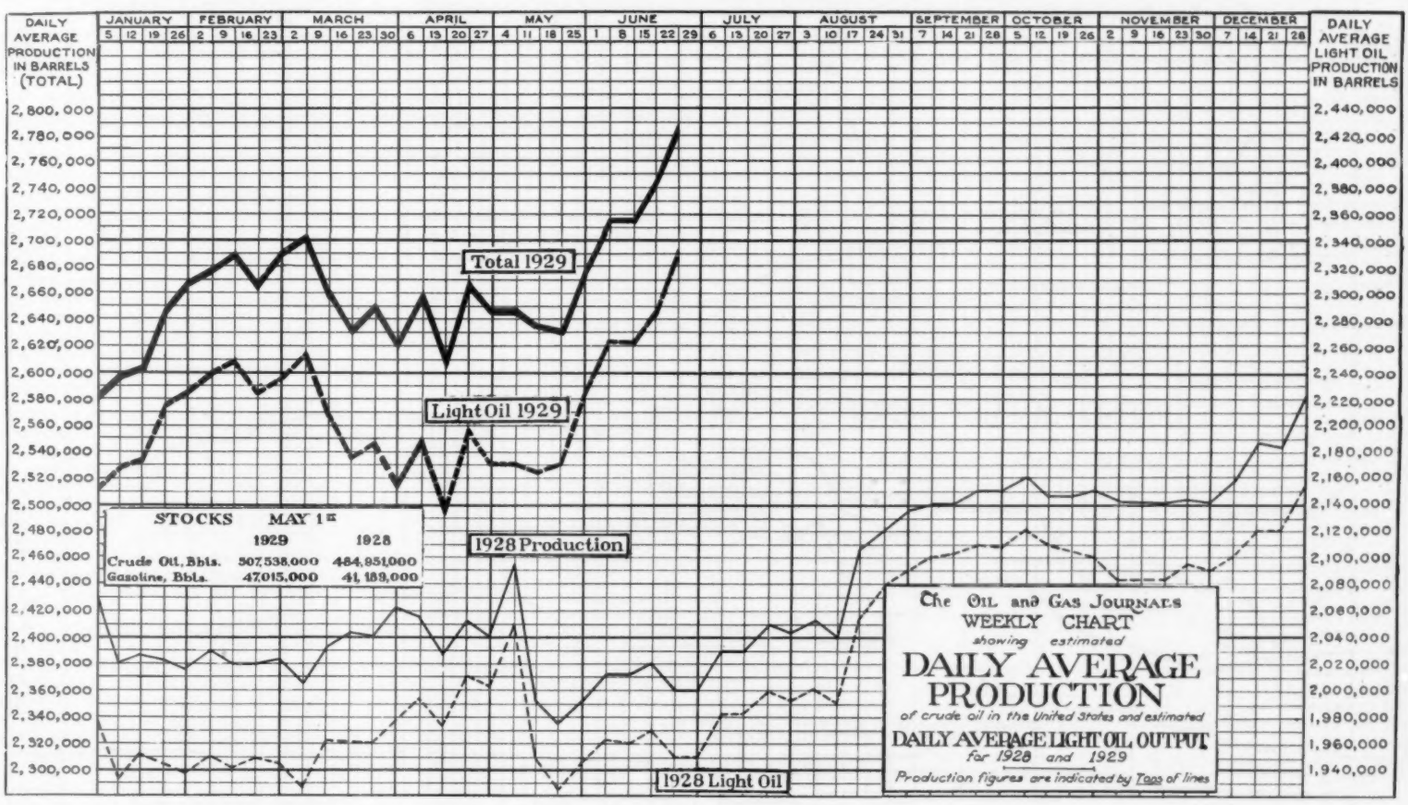
Should conditions in California necessitate or result in an earlier enforcement of the natural gas conservation measure, the entire situation might change for the better quickly.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended June 22, and a comparison with the previous week follows:

	June 22		June 15	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	9,880	.....	10,040	.....
Burbank	19,730	.....	19,775	.....
Other Osage Fields	26,355	.....	25,585	.....
St. Louis-Pearson	89,815	.....	88,645	.....
Cushing and Shamrock	18,735	.....	19,135	.....
Bristow	18,820	.....	19,280	.....
Allen	23,385	.....	23,035	.....
Seminole	283,690	.....	282,985	.....
Northern Miscellaneous	133,985	.....	131,170	.....
Southern Fields	54,760	.....	54,585	.....
Total Oklahoma	679,155	.....	674,235	.....
West Texas—				
Hendricks	143,807	.....	143,888	.....
Yates	105,282	.....	105,000	.....
Remainder	120,208	.....	121,218	.....
Total West Texas	369,297	.....	370,106	.....
North Louisiana	30,060	5,920	30,755	5,980
Arkansas	21,265	48,560	21,405	48,560
North Central Texas	137,308	.....	135,928	.....
Texas Panhandle	91,010	.....	86,405	.....
East Central Texas	19,220	.....	19,365	.....
Kansas	121,210	.....	120,710	.....
Total Mid-Continent Area	1,468,525	54,480	1,458,909	54,540
Gulf Coast	.....	154,105	.....	152,418
Southwest Texas	.....	79,274	.....	76,874
Eastern	116,000	.....	116,000	.....
Rocky Mountain Area	70,245	.....	73,945	.....
California—				
Santa Fe Springs	250,000	.....	219,500	.....
Long Beach	175,000	.....	173,000	.....
Torrance	3,000	10,000	2,500	10,000
Huntington Beach	43,000	.....	42,000	.....
Elwood	26,500	.....	27,000	.....
Inglewood	15,000	9,000	13,000	9,500
Ventura Avenue	60,000	.....	60,500	.....
Seal Beach	48,000	.....	43,500	.....
Remainder of State	58,000	150,000	58,000	152,000
Total California	678,500	169,000	639,000	171,500
Total United States	2,333,270	456,859	2,287,854	455,332
Grand Total		2,790,129		2,743,186

Total Increase, 46,943 Bbls.; Light Oil Increase, 45,416 Bbls.


DAILY AVERAGE PRODUCTION IN BARRELS (TOTAL)
JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DAILY AVERAGE LIGHT OIL PRODUCTION IN BARRELS
Total 1929
Light Oil 1929
1928 Production
1928 Light Oil
STOCKS MAY 1st
1929 1928
Crude Oil, Bbls. 507,538,000 484,851,000
Gasoline, Bbls. 47,015,000 41,159,000
The Oil and Gas Journal's WEEKLY CHART showing estimated
DAILY AVERAGE PRODUCTION
of crude oil in the United States and estimated
DAILY AVERAGE LIGHT OIL OUTPUT
for 1928 and 1929
Production figures are indicated by Tops of lines

No Improvement in Gasoline Market

More Material Offered at Low Prices. Bright Stocks Higher With Advance in Neutral Oils Expected

By C. O. Willson

The Oklahoma (Group 3) market failed to show any price improvement in the principal refinery products during the past week.

The wide differential in refinery gasoline prices continues with more and more material being offered at low prices. Up to Tuesday, most of the larger refiners in the State were still asking 9¼ cents for 58-60 U. S. Motor gasoline from their jobber customers. The movement at this price apparently is decreasing instead of increasing despite the heavier consumption with the arrival of summer weather.

Jobbers who are not bound by contracts are having no difficulty in placing their U. S. Motor purchases from one-half to 1 cent under the 9¼-cent price. Not all of this material is coming from Oklahoma refineries as the lowest priced material is coming from differential territory. Low priced competition was reported by Oklahoma refiners as coming from West Texas, North Texas, Texas Panhandle and at least one large refiner in the Middle West.

Among the remaining products bright stocks and cylinder stocks were advanced by two manufacturers with the expectation that the advances will become general before the end of the week. One manufacturer advanced 150-160 D color bright stock from 35 to 36 cents and another manufacturer reported a five-car sale of steam refined stock at 16 cents, an advance of 1 cent over the previous sale. The largest manufacturer of lubricating oils in the State is behind in its orders and some of the other manufacturers are practically sold up for July on bright stocks and steam refined stocks. A general advance in neutral oils apparently is assured within the next few days. As has been the case in other advances since the first of the year the greatest price increases will be in the higher viscosity oils. The price increase in these grades it is understood will range from 1 to 1½ cents per gallon.

Gasoline Outlook

The continued weakness in the gasoline market is causing considerable anxiety among Oklahoma and other Mid-Continent refiners relative to the outlook for the summer business which has now started.

The market has been shaky for several weeks. Sellers have been inclined to discount this situation blaming the weather, jobbing storage, etc., for what was believed to be a temporary condition with better times just around the corner. Some of the refiners in the past two weeks, however, have expressed the fear that something of a more fundamental nature was wrong, with an immediate remedy necessary if the summer season of maximum gasoline consumption is to be profitable for the Mid-Continent refiner.

Some of the trade are now convinced that the trouble lies with the supply rather than the demand for gasoline. A 50 per cent increase in automobile production in the United States which has been reflected in motor car registration points to a heavy gasoline consumption and this assumption is supported by the latest government figures on refinery shipments and the state reports on gasoline tax collections. It is pointed out, however, that this increased demand has little market significance so long as the refiners increase the gasoline supply at an even greater rate with stocks substantially higher than they were a year ago.

Realization of this condition has brought the usual discussion as to the feasibility of curtailing crude oil runs to stills in the Mid-Continent to the point where the gasoline supply is brought in line with the demand, taking into consideration the present inventories which are scheduled to be reduced within the next 90 days regardless of price trends. The other alternative which could remedy the situation would be the purchase of large quantities of gasoline from time to time by exporters or domestic buyers outside the normal marketing territory of Mid-Continent refiners. In this connection it has been rumored in the trade for the past 10 days that one or more large companies were getting ready to place orders with Mid-Continent refiners. In two cases these buyers denied they had any intention of buying at this time.

Export Situation

A half dozen executives and sales managers of Oklahoma refining companies on Monday and Tuesday expressed an interest in the outlook for purchase of gasoline by exporters. Many of the trade ex-

(Continued on Page 156)

REFINED MARKET BAROMETER

Price cutting in domestic grades of refinery gasoline at several points was reported during the past week. The coastal and export prices were more firm although the demand was not active. Interior refiners, particularly in the Mid-Continent area, who were desirous of moving gasoline quickly found it necessary to lower the prices established earlier in the month. Weather conditions were generally favorable and reports indicated that the tourist trade is increasing in volume. Kerosene prices generally are steady with the demand still active in several areas. Coastal fuel oils and gas oils are firm with a steady demand for all grades. The movement of these oils at interior points is spotted with no improvement in prices. Natural gasolines continue sluggish in Mid-Continent with excess supplies reported in California. Eastern lubricating oil prices are steady and in the Mid-Continent the price trend continues upward in most grades. Wax continues soft.

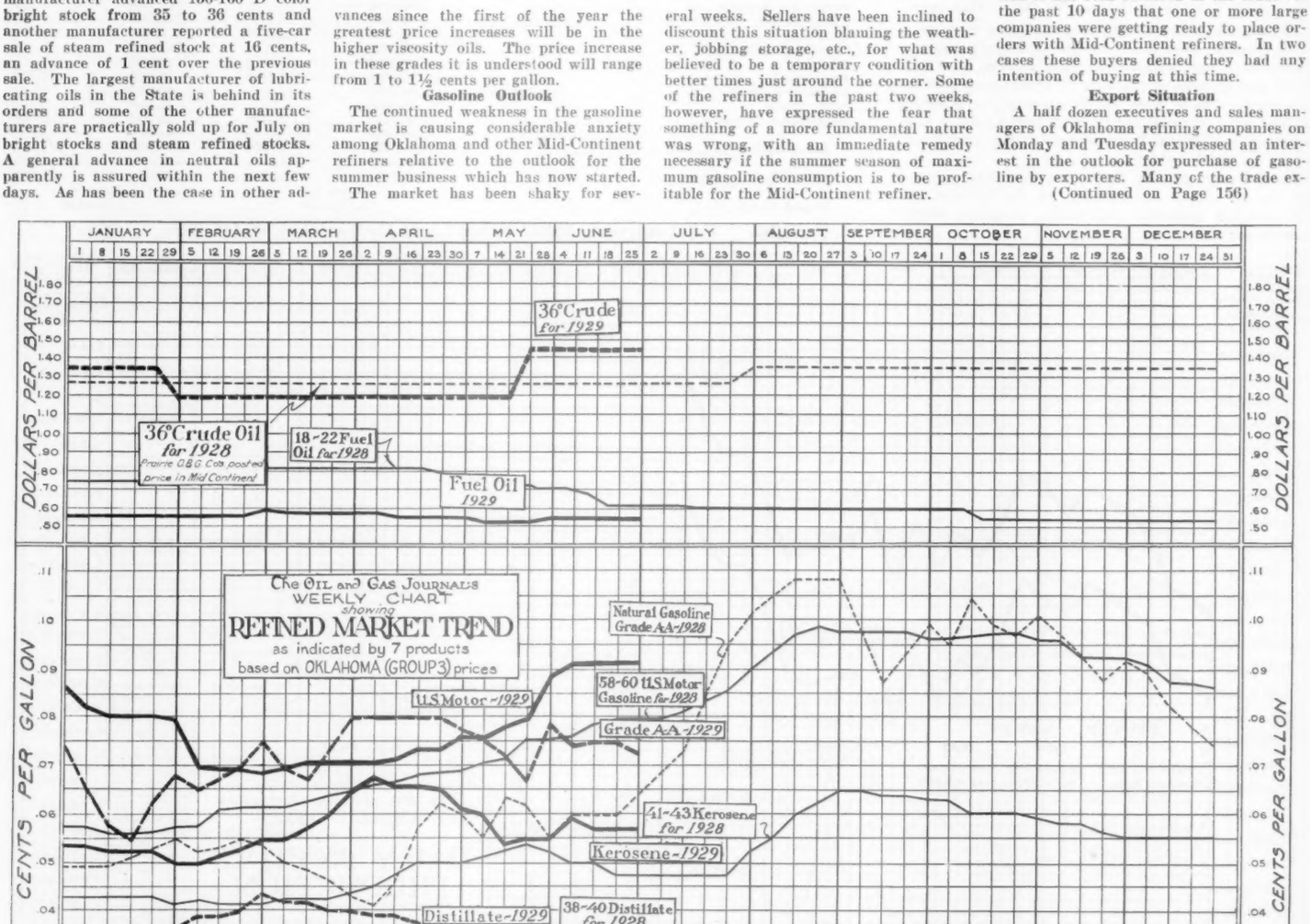
Mid-Continent—Refinery gasoline market sluggish with wide differentials in prices. Natural gasolines also weak and prices lower. Kerosene prices steady. Slow demand for fuel oil and gas oils with no general changes in prices. Steam refined cylinder stocks and bright stocks strong and prices higher. Wax weak.

East Coast—Refinery market generally steady. California gasoline increasing in importance as shipments increase in volume. Wax weaker. Diesel oil steady. Good movement of fuel oil and gas oil at steady prices. Lub oil market quiet. Kerosene prices unchanged.

Chicago—Jobber demand for gasoline quiet despite heavy consumption. Gasoline prices lower with wide range in quotations. Kerosene active and prices steady. Better demand for fuel oil.

Pennsylvania—Fair movement of gasoline at steady prices. Kerosene slow. More inquiries for wax. Neutrals slow. All grades of cylinder stocks active.

Gulf Coast—Neutrals oils firm. Fuel oils strong. Gas oil prices steady.



Lid is Off in California Curtailment

Failure of Some Companies To Co-operate Causes Conservation Committee To Remove Obligations on Part All Operators

By L. P. Stockman

LOS ANGELES, Calif., June 22.—Operators kicked the lid off California's crude oil conservation program during the past week when independent producers failed to respond to an ultimatum from major producers that they must immediately conform with Umpire van Deinse's general orders. Several independents countered to this and openly charged two large companies with failure to comply with the umpire's regulations and the meeting subsequently broke up in a row. Production restrictions were immediately removed and from now on it will be a case of every man for himself, at least until the new gas conservation law becomes effective. The dramatic end to California's mutual curtailment program was not unexpected nor did it come out of a clear sky as several of the major companies have been claiming that they were buying their own oil from independent producers who were draining the purchaser's acreage by refusing to conform with the umpire's regulations. The lifting of restrictions has been anticipated for several weeks as there has been a general breaking down of the morale during this period and this was brought to a head by General Order No. 4, which penalized prolific wells to the extent of a 34.33 per cent curtailment.

One of the most interesting features in connection with the lifting of restrictions on crude oil production is the possible effect which the movement will have on the recently enacted gas conservation law. It has been the intention of the state administration to put this new gas law into effect on or about August 18, some 60 days hence, but recent developments indicate that the effective date may be changed due to the voiding of crude oil conservation work as the lifting of production restrictions has greatly increased the waste of natural gas.

Enormous Gas Waste

Approximately 600,000,000 feet of natural gas is being wasted each day in California at the present time, a considerable portion of which is being produced in the Santa Fe Springs, Long Beach, Ventura Avenue, Kettleman Hills and Elwood Fields. It is quite obvious that early action may be anticipated if this condition is further aggravated or permitted to continue as this represents a net economic loss of at least $50,000 per day without giving any consideration to the loss in ultimate production of crude oil which would be stimulated by using the inherent energy of natural gas for repressuring work.

Santa Fe Springs, with a current daily production of approximately 250,000 bbls., is the dominating factor in state production and will no doubt continue to be a big factor for some time to come due to deep zone development. There are 224 strings of tools in operation at present and a check of new wells scheduled for early completion indicates the possibility that the daily output of this field will reach a maximum of 300,000 bbls. per day between now and the early part of August. The initial daily output of deep zone completions at Santa Fe has greatly exceeded the average anticipated by petroleum engineers and, while it is impossible to pick the exact date at which the 1929 peak will be reached, I am rather inclined to believe that the apex will be attained around July 25. This may vary one way or the other as the lifting of production restrictions will have a very decided effect on future output and may result in application of the gas conservation law sooner than has been anticipated.

Production at Santa Fe Springs has shown a consistent increase since last October due to progressive development of the Buckbee, Nordstrum and O'Connell zones, rising during this period from 37,000 bbls. per day on October 15, 1928, to its present output of approximately 250,000 bbls. There has been no break in the field's production curve during this period except that reflecting crude oil curtailment as each of the three deep zones below the Meyer horizon were developed progressively. The Buckbee and Nordstrum zones have ceased to be important factors in field production but the underlying O'Connell sand has not yet reached its peak. The last named horizon has proven the most productive of the three deep zones but the O'Connell in turn may be exceeded by the underlying Clarke zone which, up to the present time, has not been thoroughly tested out on top of the structure.

Situation at Santa Fe Springs

Some operators are of the opinion that Santa Fe Springs will quickly pass out of the picture shortly after the peak has been reached in the O'Connell zone, but it must be remembered that the potentiality of the underlying Clarke zone is still problematical. Four wells have been finished in the latter horizon up to the present time and while the apex of the structure is still untested as far as this sand is concerned correlation work indicates that the Clarke will subsequently be found highly productive. Two wells located far out on the flanks of the structure have exceeded expectations and development work up to the present time indicates that the Clarke and O'Connell zones are far superior to the Buckbee and Nordstrum. Several holes are being drilled within the inner production contour and they should throw considerable light on what may be expected from the Clarke zone in the near future as they are scheduled for early tests. Another important factor which might change the future outlook is the possibility of developing still deeper sands as there is still another 1,000 feet of untested rocks in the Miocene which are geologically favorable for the accumulation of petroleum in commercial quantities. There is every reason, therefore, to anticipate additional discoveries at least on top of the structure, as the Miocene is believed to extend down to perhaps 10,000 feet. It is quite obvious, therefore, that it is impossible to definitely sign a death warrant for Santa Fe Springs on the basis of present developments.

Daily production of the O'Connell zone would ordinarily decline quite rapidly after the peak has been attained due to the intensive town lot drilling which has characterized development activities in this field, but another factor will enter the picture within a short time after the high point has been reached and future decline curves will therefore present a rather abnormal condition. The influencing factor just mentioned will be California's recently enacted gas conservation law which is tentatively scheduled for application on August 18, in case operators fail to get together beforehand and mutually effect the desired result which, in this instance, is the elimination of gas waste. It is quite obvious that future production of the O'Connell zone and other producing horizons in this field will be greatly affected by gas conservation as this constructive work will prolong the producing life of each zone and result in a larger ultimate production than would otherwise be recovered under present wasteful practice of blowing surplus gas off into the air. In order to secure the maximum benefits accruing to economic development, which naturally precludes any excess production of natural gas, operators will be obliged to pinch back all producing wells in order to equalize supply and demand. This will result in a rather abrupt decline in crude oil production but the curve will be relatively flat after the settled period has been reached, indicating a sustained production.

Gas Conservation Law

It is problematical whether all operators at Santa Fe Springs will get together on a mutual conservation program or whether the State will find it necessary to enforce compulsory regulation in order to prevent further dissipation of natural gas into the air. It is a foregone conclusion that every progressive operator will become a member of the Santa Fe Springs Gas Conservation Committee as this is the only way in which gas waste can be eliminated. The new gas law permits and sanctions co-operative regulation among producers in order to eliminate gas waste as an alternative to the coercive feature which makes it obligatory for the oil and gas supervisor to stop excess production of gas by force if necessary. It is quite probable that the original Santa Fe Springs gas conservation program will be revived, in which event compulsory regulation would not be necessary if it is carried forward to a successful conclusion. This plan, which contemplates the use of excess natural gas for repressuring upper depleted oil zones, will permit maximum production from the deep zones and increase the ultimate recovery from present depleted horizons. It is proposed to inject excess natural gas resulting from deep zone development into the Bell, Foix and Meyer zones where it will be stored until needed or used indefinitely for recycling.

The ambitious conservation program which is being revived in the hope that operators will find it more advantageous to engage in mutual co-operation rather than enforced regulation contemplates the introduction of dry natural gas direct into the three depleted zones by utilizing specially selected receivers located at strategic points throughout the field.

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VOLUNTARY MEASURES DISCONTINUED

LOS ANGELES, Calif., June 24.—Crude oil conservation in California was definitely brought to a close when Umpire F. C. van Deinse sent the following communication to all producers under date of June 22:

"In view of the early administration of the recently enacted Senate Bill No. 560 of this State which prohibits unreasonable waste of gas, the voluntary measures of conservation sponsored by the subcommittee of the Regional Committee of the American Petroleum Institute are discontinued and all operators now stand released from compliance with general orders issued by this office. The undersigned, while no longer acting as oil umpire, will continue to serve the industry in assisting in the formation of plans for handling the surplus gas in the various oil fields of this State to the end that when the gas bill goes into effect as little disturbance as possible will occur and these plans will be submitted to the operators at meetings to be called later by the California Oil and Gas Association. Each operator is encouraged to submit to the undersigned as promptly as possible his suggestions and ideas relative to the best manner of meeting the situation."

SECRETARY WILBUR SAYS KETTLEMAN IS BIGGEST THING YET

WASCO, Calif., June 24.—Ray Lyman Wilbur, Secretary of the Interior, and Dr. George Otis Smith, director of the United States Geological Survey, accompanied by a number of assistants, conducted a tour of inspection of the Kettleman Hills oil fields today. Secretary Wilbur and his party paid particular attention to Milham Exploration Co.'s No. 1 Elliott, the discovery well of the pool.

Following his tour Secretary Wilbur discussing the Kettleman Field with a representative of The Oil and Gas Journal, said:

"It looks as though they have struck something big enough to blow the rest of the oil industry right into the Gulf stream. The operators at Kettleman should get together to provide for an orderly exploitation and development of the pool to protect the remainder of the oil industry."

Exhibiting a bottle containing a sample of the 60 gravity crude which the discovery well is producing, Secretary Wilbur said:

"What are oil companies in other sections of the country to do with Kettleman turning out this stuff which is virtually gasoline? Kettleman is probably the biggest thing that has been struck yet and in addition to a large production of high gravity crude will produce enough dry gas to supply the city of San Francisco and many of the bay cities."

The discovery well at Milham is producing about 3,500 bbls. of 60 gravity crude daily at present and 80,000,000 feet of gas. The Texas Corporation's absorption plant nearby is turning out 47,000 gallons of casinghead gasoline from this gas daily. Much of the crude produced at the discovery well is being sold in the San Joaquin Valley as motor fuel without any refining or other treatment.

West Texas Demand Exceeds Output

Crude Oil Being Withdrawn from Storage. Water in Hendricks and Howard Big Factor. Yates an Enigma

By L. E. Bredberg

FORT WORTH, Tex., June 22.—Demand for West Texas crude is in excess of the quantity being produced and pipe line companies and refineries in that big area are drawing on storage. Up to the month of May production was far ahead of distribution, wells had to be shut in for lack of storage and pipe line facilities, but these two methods of disposal, particularly the latter, have been building so rapidly, and to such a great extent, that in May production began falling below distribution until storage was begun to be drawn, the first time such a thing has happened in the history of West Texas crude oil production.

The past two weeks have shown an average of 8,997 bbls. being drawn daily from storage, with the possibility of this quantity being increased during coming weeks, unless the Yates Pool with an increase of 30,000 bbls. daily production after July 1 of permitted production causes a change in the status. The new trunk line of The Texas Company, passing through this pool from Jal, N. Mex., to Port Arthur, Tex., with a daily capacity of around 50,000 bbls. can take care of this increased amount, and will be able to run still more when it is fully completed.

Water a Serious Factor

With water a serious factor in the Hendricks Pool in Winkler County and practically all the wells in Howard County making at least 2 per cent water, the former pool is no longer a great threat in the way of production, and Howard County was never considered such to most producers. The Yates Pool, alone, remains somewhat of an enigma in regard to what it would produce if the wells were allowed to flow open, but it is also considered by many that though the wells came in with an enormous capacity they might diminish more rapidly, and that water would show up in this pool also, as it has already done on the southeastern and nortwestern edges.

With plenty of trunk lines serving West Texas at the present, and the price of the sulphur crude raised to 94 cents and better, there now seems to be active bidding by the pipe line companies, and really a scramble on for production from that sector.

The last big buy of production and storage oil in this area was made by the Shell Petroleum Corp. from Cranfill & Reynolds, contracting for around 500,000 bbls. of oil and production from the latter's leases in Winkler and Howard Counties. The reported price of this contract called for 97½ cents, or 7½ cents above the posted price for crude in these counties. Sale of this storage eliminates practically all available crude which might be had in Winkler and Howard Counties, and outside of the larger pipe line companies, only a few companies, such as refineries within the territory, have any crude in stock. This total of crude in stock is relatively small, and all the oil is needed to meet cracking requirements of the refineries in this area.

With practically all of the trunk lines from West Texas running under capacity and The Texas Company's line almost ready to handle 50,000 bbls. daily, the possibilities of all companies receiving their full desires from this district, are dwindling. Total daily capacity of all trunk lines in this district is approximately 394,000 bbls., and this, added to the total daily refinery capacity, which is approximately 111,300 bbls., makes a total of 500,300 bbls. daily. Take into consideration that the past week's daily average production was only 370,106 bbls., there is a remainder of over 130,000 bbls. daily average capacity which can be filled before all refineries and lines in the district are running to their utmost, something which has not yet happened in this area.

Potentials Are Lower

The potentials of both Winkler and Pecos Counties having dwindled considerably, with no threats of new pools of any size and extent being opened, wildcatting should be stimulated to a marked degree, given an extra boost by the increase in crude oil prices in this district.

There seems to be no great need of worry in regard to conservation in West Texas at the present, since storage is being drawn on, and production is considerably lower than distribution, and there seems to be a rather strained spirit in the air, emanating from the companies which are, or will soon be, in need of considerable quantities of crude to supply their demands, and with no visible means of supplying said demands.

In the opinion of many independent operators and company men, there will be another increase in crude prices in a short while. This may be merely a conjecture, but due to the fact that crude is being much sought, and that there is rather a large demand being made by refineries and pipe line companies, some of them paying good premiums for oil in storage, and for production from the fields, this conjecture seems to have a fairly good backing, and will cause some of the independent operators, who have considerable storage, to hold their oil if it has not been contracted for and wait for another advance.

Those refineries and pipe line companies who had long standing contracts with producers on the previous posted prices of West Texas crude were considerably lucky, but those which had no such contracts will find that it will probably be hard sledding picking up enough crude to keep them running to capacity from now on. However, wildcatting may bring in other pools.

Wildcatting May Aid

Several wildcat discoveries in Lea County, New Mexico, are now connected by the Humble Pipe Line Co. and The Texas Pipe Line Co., and these wildcats will help fill up the lines of these two major pipe line companies operating in this district, both of which have gathering lines in Winkler County, the former having the largest gathering system in West Texas and two trunk lines with a total capacity of approximately 105,000 bbls., the latter just completing a combined 10 and 12-inch welded line from Jal, N. Mex., to Port Arthur, Tex. This line is to have a capacity of around 50,000 bbls. daily, and it is rather questionable if it will run to capacity at the time of completion, since other trunk lines from this district are not doing so at present, and the outlook for surplus crude is diminishing.

West Texas, in the past, has rather been a rosy place for refineries and the first pipe lines in this district but the status has been changing quite rapidly for the past two months, and will be anxiously watched by many companies operating in this area, and will be interestingly watched by all those who have known West Texas from the time of the discovery of the premier field, in Mitchell County, the Big Lake Field, the phenomenal Yates Pool in Pecos, and the great producing Hendricks Field in Winkler County, the latter two causing excitement throughout the oil industry, and remaining in the spotlight since their discovery. They were the two big threats in the industry, but at present seem to have lost their fearsome aspects, and the long-asked question as to what the Yates Pool would do if opened up, is rarely asked now, for the majority believe that water would soon be a result, to a great extent in many parts of the pool, if not all over. However, that remains to be seen, probably sooner than we realize at present, for the oil in storage will not last long at the rate it is being withdrawn now, with the possibility of being drawn off at a really greater rate, and some source will have to fulfill the pipe line's needs.

Lubrication Vital for Wire Rope

Study Should Be Given to Selection of Proper Lubricant and to the Method and Frequency of Its Application

By C. D. Meals
Chief Engineer, American Cable Co., New York

Most users of wire rope are aware of the fact that at the time the rope is fabricated its core is impregnated with a chemically neutral lubricant. Unfortunately, however, it is not sufficiently appreciated that this initial lubrication of the core is not permanent and that if maximum life from a wire rope in service is to be obtained the rope must be effectively lubricated at frequent intervals, this implying the use of a lubricant of the correct grade, properly applied.

In other words, though the life of a wire rope is influenced by such factors as method and materials of construction, manner of winding, intensity of the service, high temperatures, presence of water, acids or alkalies, the most important factor determining how long the rope will last is the degree to which it is protected by effective lubrication.

Wire rope cores are of two main types, those with a hemp center and those with a wire rope center. In the majority of cases, however, a core of hempen fibre is employed.

Use of a lubricated hemp core in a wire rope served two main purposes: It insures protection against rust and corrosion of the inner strands and it insures the maintenance of adequate flexibility with a minimum of friction when the rope is first put into service, and preserves the fibres of the core.

Rope's Life Depends on Core

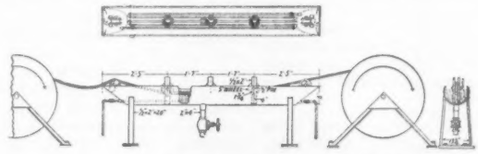
It has been said that the life of a wire line is largely dependent upon the core. This is only another way of emphasizing the need for efficient lubrication, for the purpose of the hempen core in addition to the functions mentioned is to provide a medium for the absorption of the lubricant and to cushion the interior faces of the strands. Consequently, when the core becomes dry and worn the rope no longer receives adequate lubrication. Conversely, if a wire rope in service is not lubricated at frequent intervals, the core will become excessively dry and deteriorated, to the ultimate serious detriment of the rope.

It should be noted, however, that wear in any wire rope in active service can never be wholly eliminated, for it is impossible to prevent some friction between individual strands of the rope, and between the sheaves or winding drums and the rope's exterior surface. But friction—and, therefore, wear and increased bending stresses—can be minimized by selecting a suitable rope lubricant and applying it properly; and deterioration caused by such factors as water, acids, alkalies, high temperatures, or corrosive fumes can be materially lessened by the use of a lubricant possessing the qualifications essential for the particular conditions of rope use.

When a rope is bent, friction develops between the inner strands. A lubricant is necessary to decrease this friction. Since bending tends to squeeze out lubricant from the core and inner surfaces of the rope, reapplication of lubricant at regular intervals becomes necessary. By using sheaves or drums of large diameter the bending of a rope will not be so sharp and, therefore, less lubricant will be squeezed out. On the other hand, small sheaves necessitate the more frequent lubrication of the rope.

Core's Life Depends on Lubrication

The life of the core depends largely upon its being lubricated at all times. Remember that even an axial stress on the rope causes compression of the core. In addition, there is the deterioration resulting from the crushing action that takes place when the steel strands press into the hempen core as the rope is wound on and off the sheave or drum. Core wear is minimized by keeping it impregnated with lubricant. A dry core not only will absorb moisture, but will also deteriorate and crush sooner than a well lubricated one, all of which affects the wearing qualities of the rope.



—Courtesy American Cable Co. and Vacuum Oil Co.
Simple tank type of lubricator that can be made by anybody handy with tools.

From the foregoing it becomes evident that lubrication of a wire rope is necessary to retard rust and corrosion, to reduce the internal friction between the individual inner strands, to reduce the external wear by minimizing the friction between the outer surfaces of the rope and the drum or sheaves, and to retard the deterioration of the core by main-

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Effects of Speed on Pump Operations

Too Fast a Stroke May Be Detrimental. New Instrument Records Polished Rod Load at All Portions of Stroke

By Robert R. Robinson
Consulting Engineer, Martin-Loomis Corp.

The exact effects of speed or a fast stroke on pump operation has for some time been a debatable point. Theory pointed toward certain definite results, but practice did not seem to bear out all of the suppositions. Frictional loads have been largely a matter of surmise. We knew they were there, and their total could be computed by the difference between the power applied and that represented by oil delivered to the surface. Just what type of frictional loads were most effective in reducing efficiency, and the exact manner in which they could be reduced, was another question.

Too fast a stroke may be detrimental in three ways: (1) Volumetric efficiency is reduced, (2) the range and value of rod stresses are increased, (3) power consumption is greatly increased. The first two may occur either through mechanical well conditions, or may be a result of inertia forces introduced at higher speeds. The last way is self-evident when the high friction loads present in the usual well are considered.

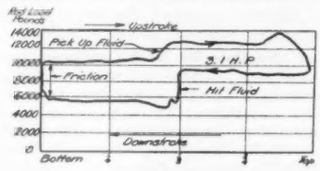

Figure 1.

An instrument has recently been developed by the Martin-Loomis Corp. for taking an indicator card from a well, showing the exact polished rod load at all portions of the stroke. Operating on the hydraulic pressure principle, it is particularly adapted to the study of speed effects on the operation of deep well pumps. There is no opportunity for time lag to effect the accuracy of results. High speed vibrations occuring at the rods are faithfully recorded on the card, in synchronism with the stroke.

Polished Rod Load

The load on the polished rod is really weighed by this dynamometer in a manner similar to the usual beam scales, with a hydraulic diaphragm taking the place of the usual counterpoise weight. The dynamometer unit comprises a pair of heavy steel castings, forming a pair of jaws pivoted together at one end and open at the other to receive a diaphragm unit similar in principle and construction to the regular weight indicator diaphragm. The body of this unit is attached to one of the castings. The load is transmitted from the end of the other casting through a hardened steel stud to the diaphragm. The diaphragm unit body is filled with water above the diaphragm.

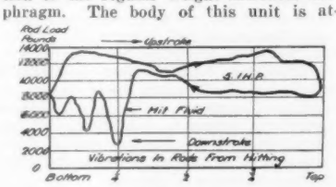

Figure 2.

The back of the dynamometer unit adjacent to the pivoted end is slotted so that it may be slipped transversely across the polished rod above the grip. Cross bolts slipped through behind the rod prevent displacement. A clamp is brought down on top of the dynamometer unit and fastened to the rod. When the polished rod grip below is loosened from the rod, the load is transmitted from the beam through the dynamometer unit and the upper rod clamp to the polished rod.

OF INTEREST TO PRODUCING COMPANIES

By L. G. E. Bignell
Petroleum Engineering Editor

At this time when there is so much being said and written about conservation it is felt by The Oil and Gas Journal that anything that will tend to aid the producing companies in lowering the lifting costs at pumping wells will be appreciated by the engineers and others actively engaged in this phase of work. This article is therefore offered at this time with the thought that it is a contribution to the science of production of petroleum in that it sets forth considerable new data on this subject, especially as it pertains to the work being done in the California fields and some of these data may be of interest to the production men of other areas. Other articles of like nature are to appear in The Oil and Gas Journal from time to time in this section carrying out the general idea that all contributions to the science that will help to reduce lifting costs will be acceptable to the reader.

The polished rod load is therefore supported by the dynamometer unit particularly by the pivot between the castings and partially by the diaphragm unit in a definite leverage ratio.

The pressure generated in the diaphragm unit is therefore a direct measure of the polished rod load. A flexible tube connects the diaphragm unit with the recording unit. This unit consists of a specially fitted hydraulic indicator similar to the usual steam engine indicator. The indicator drum is connected by a string or wire to the walking beam close to the saddle bearing, so that the drum is oscillated in direct synchronism with the rod stroke but at a greatly reduced motion. The indicator stylus traces a graph, the height of which represents the polished rod load at any point. A pressure gauge calibrated to read in pounds pressure and directly in pounds rod load is also graduated to give the correct size of indicator spring to use for a maximum height card.

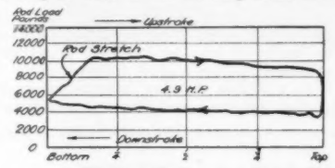

Figure 3.

This dynamometer may be applied to the polished rod in a few minutes' time without disturbing the stroke adjustment in any manner. In testing wells, it is important that the well be shut down for a minimum period in order that the test may be made under normal pumping conditions without waiting a considerable length of time to bring the fluid column and well conditions back to their original state.

Indicator Cards

Indicator cards obtained from this instrument enable a careful and accurate determination of conditions affecting the pump operation. The effect of various adjustments is immediately apparent. The pumping speed may be changed a number of times during the test. The cards shown herewith represent tests made on various wells in the California fields. Almost every well will show a different pumping condition, even though mechanically the wells may be almost identical.

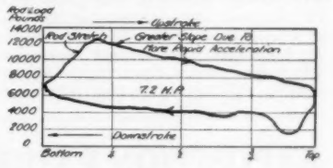

Figure 4.

Reproductions of six actual cards from four wells are shown herewith. Cards Nos. 1 and 2 show how high speed effects volumetric efficiency. Without reference to the gauged volume of fluid pumped, card No. 1 shows that on the downstroke fluid is reached at about half stroke. Pickup on the upstroke occurs slightly before half stroke is reached, showing that probably the volumetric efficiency will run below 50 per cent; the exact amount can, of course, be gauged from the oil delivery. But here is a visual record without any other indication, that the barrel is not filling. Card No. 2 shows the result of speeding up this same well. Fluid is reached a full three-fourths of the way down, showing very plainly that the well is operating at much too high a speed.

Cards Nos. 3 and 4 are from another well and show its operation at two different speeds. The first card is a very good card. The second card, though operating at a higher speed, is a much better card than either cards Nos. 1 and 2. In both of these cards, the well is operating at a comparatively high volumetric efficiency, higher probably than if the well had been operating even more slowly.

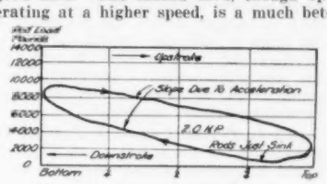

Figure 5.

A particular point in connection with cards 3 and 4 is illustrated in the indication of acceleration. Both the up and down stroke lines of card 3 are but slightly inclined, showing a moderate acceleration. The numerical value of load range due to acceleration at the polished rod is seen to be approximately 2,000 pounds. A little over a 50 per cent increase in the speed on card No. 4 shows a much more steeply sloping upstroke line and a stress range along it of about 5,500 pounds, which may be taken as the approximate numerical value of the load range due to acceleration. Downstroke acceleration, of course, is not as great nor as important but reference to card No. 4 shows it to be appreciable at high speed, especially at the end of the down stroke. Here the rather rapid rise in load during deceleration is plain.

Card No. 5 shows a very shallow well pumping heavy oil at a relatively fast stroke. The acceleration slope covers a range of a little over 5,000 pounds on the upstroke.

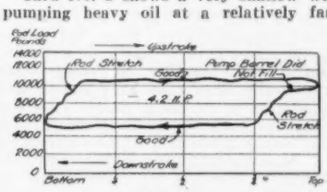

Figure 6.

Card No. 6 shows a card from a long, slow stroke well. In this case, the value of acceleration is so small as not to affect the stress range. A slight loss in volumetric efficiency is indicated at the end of the upstroke due to the fact that the pump barrel did not completely fill.

Another loss in volumetric efficiency will be seen by comparing the upper end of the card with card No. 3. This brings up a new condition. The speed of card No. 6 is so slow that it would be very safe to assume that the plunger very

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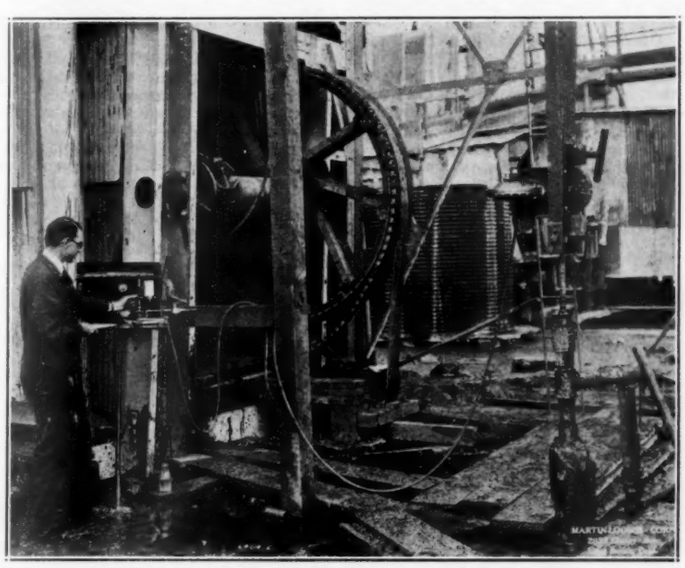

Testing a well.

Hoover Standing Pat On His Policy

Still Has Hopes of Interstate Compact for Prevention of Waste of Oil or Gas. Disapproves Tariff Proposal

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 24.—After a careful consideration of all statements made at the oil conservation conference held at Colorado Springs President Herbert Hoover is standing pat on his conservation policy.

The President still hopes and believes this policy will be carried out in respect to the interstate compact for preventing waste of oil or natural gas. He has no intention of deviating from his original purpose which sought the closing of the public domain to oil exploration and exploitation without affecting equitable rights of permittees who have in good faith proceeded to discover and develop oil deposits. There will be no retroactive action taken and every case that is brought before the Secretary of the Interior will have careful and prompt consideration with a view to recognizing equitable rights. However, these rights must rest upon actual labor performed and money expended.

Secretary Ray Lyman Wilbur of the Department of the Interior and chairman of the Federal Oil Conservation Board, is now in California. Dr. George Otis Smith, director of the Geological Survey and chairman of the Technical Advisory Committee of the Conservation Board, has left this city for California and will join Secretary Wilbur in that state. Just as he proceeded to obtain an agreement with operators in the Kettleman Hills oil field for the shutting in of production on the government-owned land in that field he will now endeavor to add to these agreements others that will take in production adjacent to the main structure there.

Public Domain Policy

The administration is determined by every proper effort to postpone production of oil on the public domain by restrictive agreement.

At Colorado Springs the representatives of the Rocky Mountain States occupied a very prominent place in the discussion bearing on oil conservation but it is believed here that they said nothing that had not already been put forward in opposition to the closing of the public domain. Dr. George Otis Smith characterized their presentation of their case as simply "oratory."

It is very well known that Senators and Representatives from the public lands states have hesitated to make any united issue against oil conservation. Practically all of them have limited their opposition to President Hoover's oil conservation policy to an insistence against any retroactive action in the enforcement of Departmental Order 338. Senator Walsh of Montana has claimed that the President exceeded his power in the issuance of that order on the ground that it nullifies the general leasing act of 1920. But when a resolution was referred to the Committee on the Judiciary and by that committee placed in the hands of a sub-committee of three of its Senators, one of whom was Senator Walsh himself, the sub-committee declined to recommend an investigation of the President's act. Right there the question of authority has come to an end so far as any action in either the Senate or the House of Representatives is concerned.

While there may be some further effort to question the authority of President Hoover's oil conservation policy in respect to the public domain, E. C. Finney, formerly assistant secretary and now solicitor of the Department of the Interior, has seen no reason to modify his contention that the mere giving of authority in an act of Congress to perform an administrative function is not mandatory and in order to make such an act mandatory Congress should have used the words "authorize and directed." He is familiar with every decision that has ever been rendered bearing on that question and he is firm in his opinion that the President was given discretionary power for the issuance of licenses for exploration and exploitation on the public domain in respect to the government's petroleum and natural gas resources.

The policy of President Hoover does not necessarily mean that the public domain will be closed to oil exploitation until there is a national emergency to make it necessary for the government to obtain that oil. His act does not close the public domain for oil exploration for any given number of years. It does close it for an indefinite time and until there is no recognized overproduction of oil.

Tariff Disapproved

The demand for a duty on crude oil coming into this country has made no impression on the administration that promises any deviation from President Hoover's disapproval of such legislation.

It is not believed here that with the enactment of an effective interstate compact for the conservation of oil there will be any benefit in the price of oil to producers obtained by the enactment of a tariff on the importation of crude oil. It is thought the intense competition which has always characterized oil production will operate to keep prices down to a level that will not cause criticism on the part of the consuming public while the enforcement of a rational conservation policy to prevent overproduction will tend to establish a level of prices that will allow the entire industry to operate on a paying basis.

It is fully recognized that both the oil industry and the advocates of conservation must take into account the international aspects of the business of producing oil. It is understood that the production of Venezuela and Colombia especially must affect the world market and world prices but it is pointed out that the disastrous condition that has faced the oil industry in the United States has come from uncontrolled outpouring of flush production from one prolific field after another and that the low price of Venezuelan oil has been largely brought about because of the low price placed on domestic production. If the industry within the United States can be so stabilized to prevent overproduction and a demoralization of the foreign market it is believed that condition will strongly tend to stabilize prices of oil from Venezuela and Colombia.

Effect on Prices

It is pointed out that the very companies that are interested in stabilizing prices of crude oil in the United States are the companies that control oil production in the two South American countries referred to. If oil in Venezuela and Colombia can be marketed at all it must be marketed on the basis of prices established in the United States.

In addition to these reasons administration Senators and Representatives believe that our enormous exports of drilling machinery and other equipment used in the foreign oil fields makes it worth while not to invite retaliation on the part of countries that might feel their interests would be affected by a heavy duty on their oil here. The opportunity for gain is not considered to be equal to the disadvantages that might follow such legislation against South American countries.

It is also well understood that an import duty on crude oil coming into the United States would not keep that crude oil from entering into competitive markets of the world. It would mean it is believed, the establishment of refineries in South America and the building up of a refinery business there that may as well be kept in the United States. It is desired to prolong the life of crude oil in this country and to re-establish the business in producing oil on a paying basis which the administration believes can be done if an interstate compact for properly regulating the industry can be enacted.

No Date for Next Conference

No date has been set for the next oil conference to be called by President Hoover. Before that is done there will be many conferences among leaders in the principal oil-producing states. It is regarded as desirable that so far as possible the leaders, especially in California, Texas and Oklahoma, shall come to some understanding in respect to the scope of the proposed interstate oil compact.

There is no desire to adopt any coercive measure to bring about the conservation of oil. There is no expectation that there will be any coercive measure either by the States or the National Government in establishing the principle of conservation to prevent waste of oil or natural gas. It may be regarded as necessary, however, in the execution of the general principle or policy for the economic and orderly development of an oil structure that one or a few holders of leases forming an inconsiderable minority should not be permitted to prevent the execution of such a policy by holding out against a course of development decided upon in the interest of an orderly development of a structure. Just how such minority holders of small interests in an oil field that it is sought to control will be dealt with will be one of the most difficult problems to receive attention. Aside from that the general scope of permissive legislation for oil conservation is expected to follow very closely on the proposed amendment to the antitrust laws as stated in an editorial in The Oil and Gas Journal of October 13, 1927 in the following language:

"Provided, further, that co-operative efforts of landowners, their lessees or assignees, engaged in the production of petroleum, acting in the interest of conservation and for the prevention of the waste of oil or gas, shall not be construed to be a violation of this act."

The Committee of Nine appointed by Secretary Hubert Work when chairman of the Federal Oil Conservation Board on February 9, 1928, approved a tentative bill the essential feature of which was a similar provision as follows in Section 2:

"No agreement by two or more persons for the co-operative development and operation of an oil and gas pool shall be deemed in violation of any of the acts of Congress forbidding monopolies or agreements in restraint of interstate commerce."

Similar legislation was provided in recommendation by the Minerals Division of the American Bar Association except that plans for carrying into effect con-

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EXPOSITION EXHIBITS WILL COVER ALL PHASES OF THE OIL INDUSTRY

Exhibitors now listed for the International Oil Exposition, to be held in Tulsa from October 5 to October 12, inclusive, cover all phases of the oil industry, William B. Way, general manager of the exposition, reports. There will be many new things in the exposition, it is announced. New processes in electrical welding will be included in the display. The exhibitors now definitely assigned include:

Advance Rumley Thresher Co., Wichita, Kans.; Air Reduction Sales Co., New York, N. Y.; Allegheny Steel Co., Brackenridge, Pa.; Allis Chalmers Manufacturing Co., Milwaukee, Wis.; Aluminum Co. of America, Tulsa; American Brass Co., Waterbury, Conn.; American Car & Foundry, St. Louis, Mo.; American Fomon Co., Philadelphia, Pa.; American Hammered Piston Ring Co., Baltimore, Md.; American LaFrance & Foamite Co., Utica, N. Y.; American Rolling Mill Co., Middleton, Ohio; American Steel Works, Kansas City, Mo.; Appleton Electric Co., Chicago, Ill.; Arco Co., Cleveland, Ohio; Armstrong Machine Works, Three Rivers, Mich.; Athey Truss Wheel Co., Chicago, Ill.; Atlas Life Insurance Co., Tulsa.

Baker Oil Tools, Inc., Huntington Park, Calif.; Baldwin Tool Works, Parkersburg, W. Va.; Barber Greene Co., Aurora, Ill.; Barco Manufacturing Co., Chicago, Ill.; Bausch & Lamb Optical Co., Rochester, N. Y.; Bethlehem Steel Co., Bethlehem, Pa.; Blaw-Knox Co., Pittsburgh, Pa.; Bosch Magneto Co., Inc., Long Island, N. Y.; Botfield Refractories, Philadelphia, Pa.; Broderick & Bascom Rope Co., St. Louis, Mo.; Braden Steel Corp., Tulsa; Braun, C. F., & Co., Alhambra, Calif.; Bristol Co., Waterbury, Conn.; Buda Co., Harvey, Ill.; Buffalo Bolt Co., North Tonawanda, N. Y.; Bullard Davis, Inc., San Francisco, Calif.

Cameron Tool & Supply Co., Cameron, W. Va.; Chaplin Fulton Co., Pittsburgh, Pa.; Chicago Bridge & Iron Works, Chicago, Ill.; Chilton Class Journal, Philadelphia, Pa.; Clark Brothers, Tulsa; Colona Manufacturing Co., Pittsburgh, Pa.; Cooper Bessemer Corp., Tulsa.

Darling Valve & Manufacturing Co., Williamsport, Pa.; Dearborn Chemical Co., Chicago, Ill.; DeVilbiss Co., Toledo, Ohio; Durametallic Corp., Kalamazoo, Mich.; Curo Gas Burner Co., Tulsa.

Eagle Picher Lead Co., Joplin, Mo.; Electric Supply Co., Tulsa.

Federal Steam Specialties Co., Oklahoma City, Okla.; First National Bank & Trust Co., Tulsa; Fisher Governor Co., Marshalltown, Iowa; Foxboro Co., Foxboro, Mass.; France Packing Co., Philadelphia, Pa.; Frehauf Trailer Co., Detroit, Mich.

Garlock Packing Co., Palmyra, N. Y.; General Electric Co., Schenectady, N. Y.; Gilbert & Barker Co., Tulsa; Goble, B. G., Tulsa; Griscom Russell Co., New York, N. Y.; Gulf Publishing Co., Houston, Tex.

Halliburton Oil Well Cementing Co., Duncan, Okla.; Happy Belting Co., Tulsa; Haynes Stellite Co., Kokomo, Ind.; Hazard Wire Rope Co., Wilkes-Barre, Pa.; Hercules Motors Corp., Canton, Ohio; Hill, Hubbell & Co., Tulsa; Hinderliter Tool Co., Tulsa; Hopkins Equipment Corp., Tulsa; Hyatt Roller Bearing Co., Newark, N. J.; Howell Valve Works, Kansas City, Mo.

International Filter Co., Chicago, Ill.; International Harvester Co., Tulsa; In-

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Colonel Walsh Mixes Fun With Work

Leading Figure in Natural Gas Umpired One of Baseball's Queerest Games and Wore White Plug Hat at Democratic Convention

By Thomas F. Smiley

If some optimistic person had told Col. Maurice W. Walsh back in 1906 that the meeting which he and 12 other natural gas men held in the old Midland Hotel in Kansas City, Mo., on February 20 of that year would prove to be the forerunner of an organization which would have 1,800 members and exert a powerful influence in the affairs of a great industry, the Colonel probably would have smiled agreement, but back of the smile would have been mental reservation. For not even Colonel Walsh, who is credited with having originated the idea of the natural gas organization and whose record for faithful attendance at its meetings is declared to be unrivaled, could have foreseen the growth in membership and importance which the body was to undergo.

There was a fourteenth man at that initial meeting, but he was not a natural gas man, he took no part in the deliberations and he attended no subsequent meetings. His job on this occasion was being the fourteenth man.

Colonel Walsh was residing in Ottawa, Kans., at the time, in the service of the Ottawa Gas Co. Among his friends was Clifford W. Sears, general contracting agent for the Kansas Natural Gas Co., whose duties brought him in contact with officials of many gas companies. Convinced of the need of co-operation and exchange of views in the business, Colonel Walsh suggested to Mr. Sears that he urge upon these men the benefits of organization. Mr. Sears did this and the result of it was the Kansas City meeting, with various towns in Kansas, Missouri and Oklahoma represented.

Start Off With a 13 Jinx? Never!

There were just 13 men present when they were about to sit down at the dinner which preceded the deliberations. That wouldn't do. A traveling salesman for a mercantile house was sitting in the lobby. "Come in and save us from the 13 jinx," he was implored. He good-naturedly consented.

A month later another meeting was held in the same hotel. Twenty-five men were present this time and they became charter members of the Natural Gas Association of America, now the Natural Gas Department of the American Gas Association. At this meeting Colonel Walsh presented the name of the late Kerr M. Mitchell, general manager of the St. Joseph (Mo.) Gas Co., as president, and Mr. Mitchell was elected. From that time Colonel Walsh has attended every national meeting of the association and he has been present at every meeting of any committee of which he was a member.

This man whose life has been so closely identified with the natural gas industry and with the history of the Natural Gas Association of America was born in Holly, Mich., in 1870. When he was only a year old he was taken by his parents to Detroit, where he attended school and had three years of college preparatory work at Detroit College. The death of his parents while he was still a boy put an end to schooling and young Maurice went to work in a plumber's shop, where he served an apprenticeship. His connection with the natural gas industry began in 1888, when that fuel was brought into Detroit and he got a job in the shops of Detroit City Gas Co. In 1890 he struck out for Buffalo, N. Y., to take a job as gas-fitter with William Tibbins, a shop superintendent for the Iroquois Natural Gas Co.

Arriving in Buffalo early in the morning, Maurice went to the main office of the company and as he entered the doorway he encountered a man who was leaving and to whom he expressed his wish to see Mr. Tibbins.

"I'm just starting for the Upper shops, where Tibbins is superintendent," was the response. "Come along with me."

The friendly manner of his new acquaintance warmed the young man and prompted him to slacken his pace as they approached a place with swinging doors and to ask, "Would you care for an early morning morning?"

The reply was affirmative. The two went inside. "I'm M. W. Walsh of Detroit," Maurice informed his new acquaintance.

"You haven't got a thing on me," returned the other. "I'm John Walsh, superintendent of the Lower shop of the Iroquois Natural Gas Co., Buffalo, N. Y."

The two Walshes were good friends thenceforth. Mr. Tibbins put Maurice to work as a fitter in the Upper shop.

A baseball game was one of the features of a picnic held by gas company employes soon after Maurice's advent and it was planned that he should play on the Upper shop team. A protest was made by members of the Lower shop team, who declared he was a "professional," basing this charge on the fact that he had been an outstanding athlete and baseball player during his schooldays in Detroit. The committee which passed on the eligibility of the players ruled that the charge of professionalism was well founded and barred Maurice from playing.

But He Could Umpire—and How!

Mr. Tibbins, representing the Upper shop, and John Walsh, representing the Lower shop, flipped a coin to determine which of them should have the privilege of selecting the umpire. Tibbins won. He selected Maurice.

In point of unusual playing rules that game is perhaps without a rival in the annals of baseball. One of the provisions was that every man who made a base hit should have a glass of beer upon his arrival at first and that the umpire should have one too. The day was hot and the umpire found the incentive to allow base hits irresistible. It is declared that at one juncture, when two Lower shop batters had struck out and it looked as though the third man up was going to do the same thing, the thirsty umpire, impatient over the prolonged drouth, bawled "Safe!" when a feeble pop foul dropped languidly into the paws of the Upper shop catcher. According to one version of the story the umpire made no effort to quiet the squabble which ensued, but took a position close to the source of liquid supply.

After the vociferous outpouring of opinions regarding his decision had slowed down the umpire is reported to have explained with winning blandness that the varying shades of thought grew out of differences of viewpoint merely. From where he himself had stood, for instance, it had looked as though the batter was going to reach first safely; so, to save time, he had given his decision in advance. But, he added, if subsequent developments had seemed to be out of line with his forecast, why he had no wish to be obdurate. No, indeed. It wasn't trouble he wanted at all. In fact, it was something entirely different, and he had got it, so let's go on.

Everything Has To End Sometime

There was some uncertainty as to how many innings had been played when eventually nobody appeared at the plate in response to the umpire's "Batter up!" There was even division of sentiment as to which side had batted last, and the umpire, desiring to avoid entangling alliances, refrained from injecting personal views, especially as nobody asked for them anyway. So the game ended for want of kinetic energy. The umpire, summoning such of his arithmetical powers as remained, announced that the Lower shop team had amassed enough runs to win the game. "To keep my conscience clear and to show that I could be gracious and large-minded under trying circumstances," the Colonel explained later. Nobody ever knew just what the score was—not even the scorekeeper.

After a year in Buffalo young Walsh returned to Detroit, where he entered the employ of the Detroit Stove Works, assembling and testing natural gas ranges. He went to Chicago in 1892 and became an appliance inspector for the Economic Fuel and Gas Co.

In 1896 the young man was one of several Economic Fuel & Gas Co. employes sent to Kansas City to help a company there in the installation of manufactured gas in that city, in response to a request from the late M. M. Sweetman, then superintendent of the company. The arrangement was to the effect that if the Chicago workmen, who received free transportation to Kansas City, remained in the service of the Kansas City concern 90 days, they would be entitled to free transportation back to Chicago.

What Was This, Luck or Genius?

Maurice had been in Kansas City about a month only when labor difficulties tied up work for the gas company. He went to Mr. Sweetman and asked for a railroad ticket to Chicago.

"But you haven't worked 90 days," expostulated the superintendent.

"Can't help that," returned the other. "It's no fault of mine if you fail to get along with your workmen and have a strike on your hands."

Mr. Sweetman suggested a compromise, offering to pay half the cost of the railroad ticket. Maurice accepted, but added, "I'm going to get the rest of it."

Out in Walnut Street Maurice encountered a group of men who were enlisting recruits to go to Chicago and stir enthusiasm for Horace Boies, of Iowa, as candidate for President at the National Democratic convention. Maurice was asked if he would go. He rubbed his chin as though turning over a perplexing problem in his mind and after a few moments of what passed for deep thought replied: "I certainly would like to go and I ought to be able to arrange my affairs so that I can do it." Then he added, as one resolved to allow no personal inconvenience to interfere with performance of a patriotic duty, "Yes, I'll go."

So the young gas-fitter signed up as one of the boomer delegation, received a white plug hat and a badge, rode to Chicago on a special train equipped with a bewildering variety of things to eat and drink and had accommodations at the

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MAN WHO BROKE JINX IS FORGOTTEN

There's something satisfying about being one of the originators of an important movement or an epoch-marking product—a new political party for instance; a non-losable collar-button; an influential social, patriotic or industrial organization, a different kind of cheese or a squirtless orange.

Col. M. W. Walsh

When a group of men met in Kansas City 23 years ago to lay plans for a natural gas organization they discovered with consternation that there were just 13 of them present. Now it may be all well enough to start a new republic with 13 states but to start a natural gas association with 13 men would be madness. Anybody knows that. So they called in an outsider to sit with them and thus exorcise the jinx.

Out of that little assemblage grew the Natural Gas Association of America, later merged with the American Gas Association. Each of the natural gas men present has looked back upon that day with gratification. Maybe Col. M. W. Walsh feels especial pleasure because it was he who suggested the meeting and who got the machinery into motion.

But what of the fellow who saved the day by sitting in as the fourteenth man? Does retrospection bring any thrill to him? Who knows whether he is dead or alive? What could the other men have done without him? Yet even his name has been forgotten.

Deserved tributes have been paid to the 13 men whose initiative and zeal brought about an organization which exerted an immeasurable influence on the natural gas industry. Here's a flower for the man who broke the jinx.

Petroleum Exchange Again Discussed

Conversations Being Carried on With Various Interests in the Industry. Analysis of the Project Presented

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, June 24.—While there have been no public announcements regarding the progress of the movement to organize a National Petroleum Exchange here, for the purpose of dealing in petroleum securities and furnishing a hedging market for crude oil and refined products, it is known that the backers of the project are still carrying on conversations with various interests in the oil industry. Should sufficient support for the Exchange develop, as appears likely, it will be a matter of six months to a year before the Exchange could actually progress to the point of functioning, if experiences in the organization of other commodity exchanges here may be taken as an example.

Of paramount interest in connection with discussions of a petroleum exchange is the suitability of the product for futures trading. An analysis of the attributes which render some commodities eligible for futures trading and which debar others appears in "Commodity Exchanges," by Julius B. Baer and George P. Woodruff, just published by Harper & Brothers. The petroleum industry's problems are mentioned, and in view of the fact that Mr. Baer, who is counsel for four commodity exchanges in New York, is reported to have been retained as counsel for the sponsors of the National Petroleum Exchange, the references to petroleum are especially timely and of interest to the industry. In the chapter devoted to commodities adapted to futures trading, the book states:

Struggle Against Oversupply

"Few industries have passed through such frequent periods of feast and famine as the petroleum industry. The prosperity generated in war time was terminated in 1921, and since then the market has become largely a struggle against oversupply, with new areas opening and pouring flush production on the market to depress prices at frequent intervals. The development of large production in California, coupled with cheap transportation through the Panama Canal, served to unsettle markets in 1925. After a brief recovery, markets again became demoralized as the flush production from the Seminole Field poured forth in 1926-27. Co-operation within the industry has arisen from necessity in the effort to regulate production.

"It would appear that the petroleum industry might benefit greatly from hedging facilities. When overproduction exists, oil goes into storage. But the stored oil represents capital locked up, and storage is an expensive process. Could refiners and producers benefit from a futures market?

"It is necessary here to note the manner in which oil is marketed. The producer receives a price fixed by purchasing agencies and one which corresponds generally with the condition of supply and demand. Price schedules are established and they move upward or downward in accordance with changes in the relationship of consumption and production. Similarly, price schedules for refined products are fixed.

"If conditions in the industry were such that prices quoted by different purchasers in the same territory differed to an appreciable extent, the usefulness of a futures market would be apparent. As it is, the close competition in the industry causes prices of different refiners in the same territory to move upward or downward with a considerable uniformity. Under present conditions, petroleum may be classed as a commodity adapted to futures trading with the marketing problem the principal difficulty in the way of the efficient working of a free futures market."

Futures Trading

The foregoing reference to the petroleum industry follows an exposition of the qualities and attributes which are found in such commodities as wheat, cotton, rubber, coffee, tin, silk, and the numerous array of other products which are traded in on organized markets. In the analysis of commodities adapted to futures trading, the book lays down these principles: "It is a condition precedent for futures trading that units of the commodity be interchangeable. The speculator or the hedger does not buy or sell any specific or identified units of a commodity, but he sells according to established grades and descriptions.

"Looking at the commodities in which futures trading is carried on it will be found that all answer this requirement of homogeneity. Some commodities are known as fungible goods. Wheat is an example of a fungible commodity. An elevator may contain thousands of bushels of No. 1 hard spring wheat belonging to several owners and it is entirely immaterial to the buyer what lot or whose wheat he receives. The stocks of the various owners are admixed, and purchases and sales made with no thought of identity. (The same would be true of U. S. Motor gasoline, prime white or water white kerosene, crude oil of specified gravity, bunker 'C' fuel oil, 32-36 gas oil, specified grades of wax, etc.) On the other hand, cotton, silk, and rubber are not fungible, but they are homogeneous While cotton and rubber are not mixed, they are capable of being graded so that one lot of a given grade is just as acceptable to buyer or seller as any other lot of that grade.

Differences in Grades

"If the units of a commodity are homogeneous, it follows, as a corollary, that the commodity must be susceptible of divisions into standard grades. There is no commodity whose units are exactly alike. Differences in grade arise from a multiplicity of causes. One lot of cotton will differ from another in length of staple, in its cleanness, and in the color of the staple. Rubber in the course of production may come out in the form of a clean sheet of amber-colored translucency, or it may accumulate dust, bark, and other foreign substances. Two bales of raw silk may vary in evenness, cleanness, and neatness of the threads; there may be variations in size, in tenacity, and in elasticity. Conditions of this sort affecting every commodity according to its nature make it impossible for every unit of the commodity to be regarded commercially as the equivalent of every other. If, however, standards can be established so that by inspection and classification the commodity may be divided into well-defined grades, readily identified by the trade, the units of each grade are homogeneous.

"The necessity of a broad market for futures trading has been pointed out. Even if every other element of futures trading were present, alligator pears would not be a commodity for which a satisfactory futures market could be maintained. The supply, compared with staple commodities, is small, and the demand is small; consequently, speculators with large financial resources might readily obtain control of an alligator pear futures market, and it would soon cease to be a natural market but become merely a battleground for contending speculative factions.

Worldwide Demand

"Some authorities hold that the commodity must be in worldwide demand. As a matter of fact, most commodities which are the subject of futures trading are in worldwide demand, although in widely different degree. It is questionable, however, if this is indispensable. The requirement may best be summarized by stating that supply and demand should be large enough so that the futures exchange will function as a market place and not merely as an arena for contending speculators.

"Not only must a supply of a commodity be large, but its flow to world markets must be substantially free and unhampered by artificial resistance. An impossible condition would exist if organized futures trading were attempted in a market where the supply was under effective control and could be increased or diminished at the will of any government, group, or individual. The market would then function not as a piece of price making machinery, but merely as an adjunct to the will of the controller of the supply.

"The term 'effective control' has been used advisedly. The Rubber Exchange of New York commenced operating at a time when the Stevenson plan for restricting production and export of rubber from British Malaya was in effect. The purpose of the plan was to control the price of rubber by periodically increasing or reducing the exportable supply. Nevertheless the Rubber Exchange functioned effectively in registering price movements in rubber from the time of its organization. The reason is that the control was not effective. Had the price of rubber been brought under complete control, every user of rubber, whether manufacturer or consumer, would have been compelled to pay prices dictated by the British government. But high prices produced the inevitable economic effect of increasing the supply from other sources; consequently, control was only partially effective.

Uncertainty a Factor

"Uncertainty of supply and demand is essential for a commodity to be the subject of futures trading. If supply and demand are both certain, prices are readily adjusted without the intervention of any organized market machinery. Again, if either of the factors is certain and the other uncertain, while the problem of adjustment is more difficult, no elaborate market machinery is required to bring it about, and there is not sufficient uncertainty to engage the attention of a large body of speculators. When supply and demand are both uncertain and subject to wide change, a condition exists where the relationship between the forces of supply and demand is constantly changing. This play of economic forces produces the constant fluctuations in price which must exist in any broad market. Nobody would call United States Government bonds, or Atchison, Topeka & Santa Fe General 4's, or United States Steel Preferred speculative footballs; yet prices of these gilt-edge securities fluctuate from day to day and week to week and over a period of years. The upward or downward price changes may assume

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NEW PROCESS TO YIELD 100 PER CENT GASOLINE FROM A BARREL OF OIL

Announcement of the commercial application of the hydrogenation of coal to the treatment of fuel crudes or refinery residues is announced by the Standard Oil Co. of New Jersey in the forthcoming issue of the Lamp which says:

The I. G. Farben-Industrie A. G. A. Corp., formed by the merger of Badische Anilin and Soda Fabrik with several other units of the German chemical industry, has carried on a most extensive program of fundamental research on the synthesis of organic compounds. Outstanding examples of the results of this work are the Haber-Bosch process for fixation of atmospheric nitrogen to produce fertilizers and the more recent synthesis of methanol (wood alcohol). In 1925 they brought to our attention certain researches along this line relating to the oil industry and since that time there has been a close contact on these developments. In September, 1927, the Standard Oil Co. of New Jersey entered into the patent and development by a contract with the Farben Industrie covering new methods for the production and refining of oil products by catalytic hydrogenation.

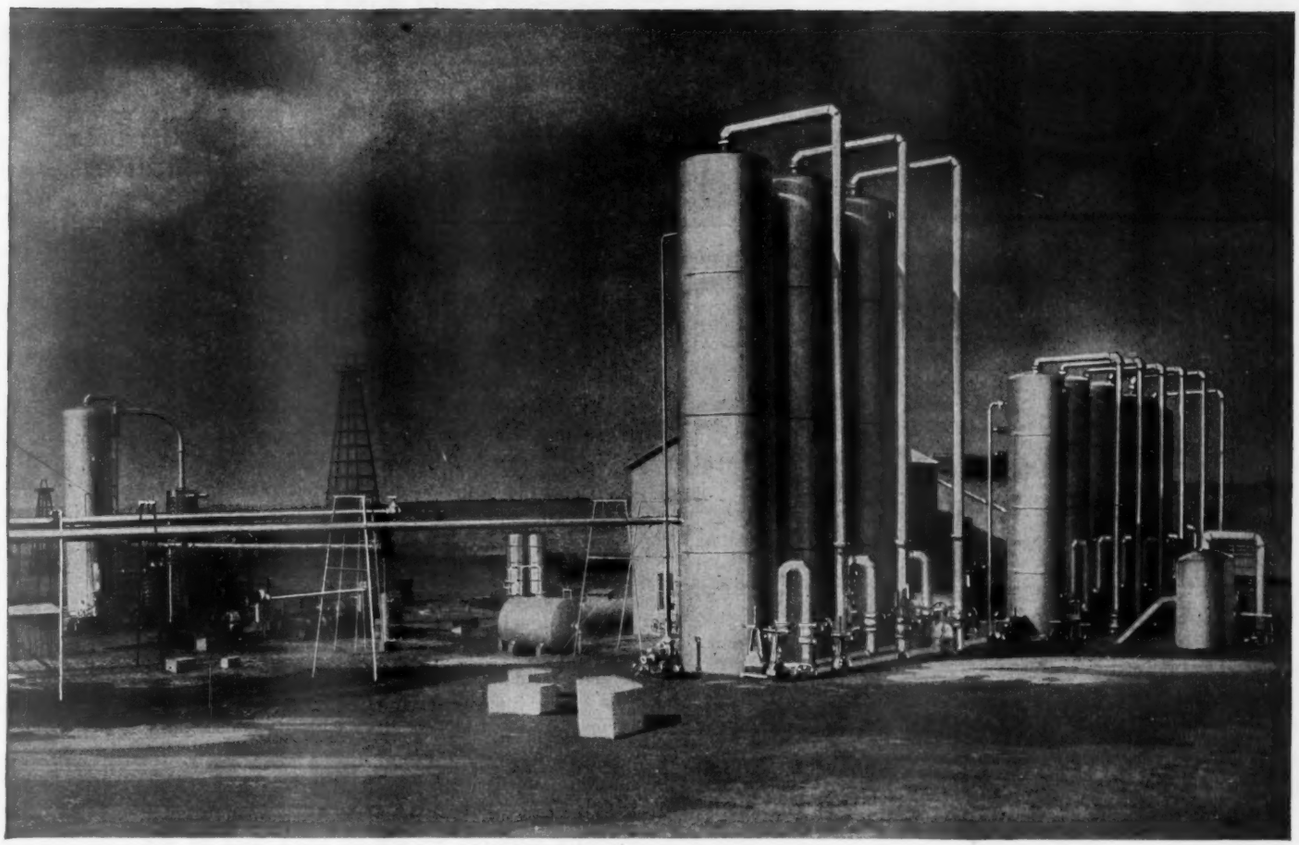
A considerable program of research and experimental work on this line was initiated by our technical staffs in 1927 and actively prosecuted throughout 1928. It seems clear these new processes will find a substantial use in the oil industry in future years although no accurate estimate can yet be made. It may be said, however, that one important effect of the adoption of catalytic hydrogenation methods by the oil industry, even on a smaller scale, will be to produce a more definite overlapping of the fields of the oil industry and industries generally known as chemical.

The article in the Lamp going into further detail continues:

In 1925 representatives of the Standard Oil Co. of New Jersey had the opportunity of becoming acquainted with the work on coal liquefaction by hydrogenation then being developed by I. G. Farben Industrie. That work has culminated in the erection and operation of a coal hydrogenation plant at Leuna near Merseburg, Germany, where production is beginning to reach commercial proportions. In 1928 over 300,000 bbls. of gasoline from coal were produced there with production for the current year estimated at considerably greater volumes. The gasoline thus produced is similar in every respect to the usual petroleum gasoline. The importance of this development to the oil industry can hardly be overemphasized. It definitely removes the fear of shortage of petroleum products and permits the development of our crude oil supplies on a rational basis. During the past few years the quality of crude oil available to the petroleum industry has changed materially. Formerly the greater part was of high quality having low sulphur content and containing the large proportion of products such as gasoline and burning oils. Today many crudes available to the industry are primarily fuel crudes or crudes of high asphalt, high sulphur content and having a much smaller fraction of natural white products. As a consequence in producing the needed supply of gasoline kerosene and similar high refined oils it has been necessary to refine an amount of crude oil

(Continued on Page 156)

CUT MANUFACTURING COSTS



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REVOLUTION IN REFINING

The oil industry, nearly swamped by the flood of crude through the marvelous efficiency of its production branch, is in even greater danger of being overwhelmed by the almost miraculous progress of its refining division.

When the International Conference on Coal met in Pittsburgh in the fall of 1926 processes for the production of oil from coal took up a large part of the program, among others the papers read by Bergius and Fischer reported in The Oil and Gas Journal.

Oil men, generally, while interested in the possibilities outlined, have regarded them as extremely remote, but they seem to have been nearer than imagined.

When it was reported two years ago that the Standard Oil Company of New Jersey had acquired certain rights in the Bergius process from the German company and was undertaking experiments at its Baton Rouge plant it was assumed that it had in mind the hydrogenation of coal as a source of oil in the indefinite time when petroleum became scarce.

According to latest reports, the chemical engineers of the New Jersey company have been more immediately practical than that. They appear to have reasoned correctly that if oil could be secured by hydrogenation of coal a similar process could be applied to the manufacture of gasoline from refinery residue.

In the Bergius process the coal was converted into a tarry liquid. The refinery residue offered a more ready and promising material.

The experimental results at Baton Rouge appear to have been sufficiently successful to have justified the construction of a commercial plant at Bayway with a capacity of an average refinery.

Heavy fuel oil or refinery residue, it is reported, can, by the new process, be synthesized into gasoline and more valuable products.

This is believed to be the first time that the oil industry has produced one of its own products by synthesis. In nontechnical terms the oil is broken down by cracking, hydrogen is added and gasoline is produced from residue hitherto thought valueless for gasoline.

The significance of this process can better be realized from the assertion that through it a gasoline yield of 102 to 105 per cent can be obtained from crude oil.

Considering that the present average recovery is around 42 per cent the importance of this discovery cannot be overestimated.

Recoveries ranging from 10 to 40 per cent are obtainable through natural distillation. It has been known that a recovery of approximately 29 per cent more, or 69 per cent, is possible by cracking.

It can easily be seen that the new process has even vaster potentialities for the oil industry than the cracking process itself when first introduced.

Besides immensely increasing the yield of gasoline it offers profitable utilization of the heavy fuel oil and residue, the effect of which will be to remove fuel oil from competition with coal in price, to the general benefit of the oil industry.

It holds out the promise also of making all crudes available for gasoline production, narrowing the differential yield value to a comparatively small percentage.

For the first time the industry would be free from the handicap of carrying a bulk by-product difficult to dispose of. It would be able to market practically all of its product at preferential prices.

Ultimately the crude market would adjust itself to the new conditions. As the value of products from crude increased, with the greater recovery of gasoline and the elimination of the overhanging bulk fuel oil, the value of the basic material should reflect that trend.

The more you can get out of raw material the more valuable it should be.

The industry, getting a better general return from all its products, could afford to pay a better return to the producers of crude.

At the same time the public would be reassured against the fear of a motor fuel shortage and the nation against waste of the national oil supply since every available fraction of a barrel of crude would be utilized to the best present advantage.

All this, of course, is not likely to be accomplished today or tomorrow. But, if the commercial plant at Bayonne is as successful as it appears expected to be, if the new process increases the average yield 10 or 20 per cent, the effects will be revolutionary.

The development of the cracking process is an illustration of what may follow, with all that has meant to the oil business.

The point today is that such possibilities are regarded practical enough to justify commercial experiment.

The speed with which the industry has taken up every advancement in producing and refining and the progress that has followed every innovation is a measure of what the future may hold.

There is no finality to the oil industry. With all the knowledge we have acquired we are no more than on the threshhold of discovery of the potentialities of this marvelous natural gift.

New situations, new discoveries, new processes, new methods are constantly springing up to upset all previous calculations.

The report of the A.P.I. Committee of Eleven as recently as 1925 and the report of the Federal Oil Conservation Board last year, discussing future demand and supply, had no hint of the commercial application of the Bergius process to refinery residue.

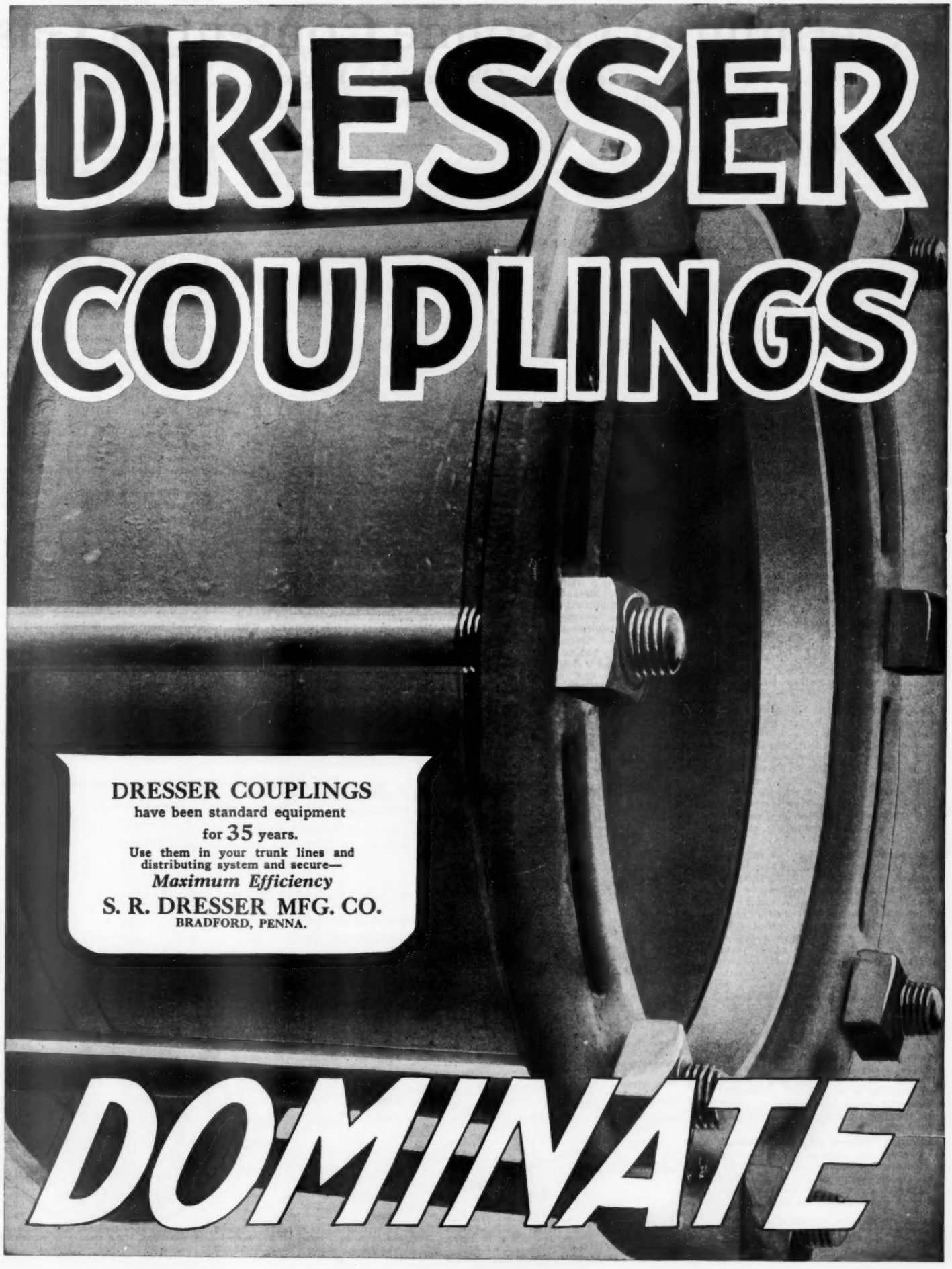
Calculations based on the present production and yields may be as out of date a year from now as those of five years ago.

While the industry and the federal and state governments have been concerning themselves about the conservation of crude in the ground the technologists of the industry have been steadily accomplishing more actual conservation of our oil resources through more efficient production and manufacture than the most extreme conservation program could have realized.

The greatest waste in the early days of the industry, measured by today's knowledge, was due to limitations since removed by the advance of science. Just as gasoline was dumped into the creeks to get rid of it, fuel oil has been disposed of for inferior uses in competition with coal to the loss of both the oil and coal industries.

The fuller utilization of the potential energy of petroleum will mean greater prosperity to the oil industry and free the coal industry from a dangerous competitor to the general benefit of the whole country which must be affected by the conditions in two of its leading industries.

And in that increased prosperity the oil producer, so long denied the real value of his product, may confidently hope to share.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Determining Gasoline Content of Gas

Special Separation of Natural Gas by Fractional Distillation at Low Temperatures and Pressures

By Martin Shepherd*

This paper describes a method for the accurate determination of gasoline in natural gas. The determination involves a special separation of the natural gas by fractional distillation at low temperatures and pressures. A recombination of the resultant fractions is made in such a way that it is possible to determine the maximum amount of hydrocarbon condensate present in the original gas which possesses any given vapor pressure at any given temperature. Special forms of apparatus are used for separating the higher boiling constituents and determining their liquid volume to 0.001 ml. Analytical results are reported and a comparison made with existing field and laboratory methods.

Those who may be interested in the detailed technique of the method will find a complete description of apparatus and procedures in Research Paper 75, June, 1929, issue of the Bureau of Standards Journal of Research. That paper is intended as an instruction book for those who wish to actually engage in such work. Reprints of the paper may be obtained from the Superintendent of Documents, Washington, D. C.

Need for and Scope of Method

It is well known that the existing field and laboratory methods for the determination of natural gasoline in natural gas do not give satisfactorily consistent results. The three in common use, i.e., the compression cooling method, the oil absorption method, and the charcoal adsorption method, occur in many variations and the individual operator is apt to introduce modifications suitable to his peculiar needs. It is very difficult to obtain satisfactory agreement between the methods, and apparently difficult for different operators to obtain satisfactory analytical checks by use of the same method.

The Natural Gas Association of America recognized this discordant state, and appointed a committee to study the problem and formulate standard methods of test. The committee's investigation led to a partial and tentative standardization of the three methods already mentioned and a critical study of their accuracy which the present paper will report in part. This study has clearly shown the need of a reference method for the determination of natural gasoline.

The method here proposed is intended for reference, standardization and investigational work. The relatively complicated equipment and procedures required make the method unsuited for routine field testing or ordinary plant control. It possesses its own distinct value, however, whenever new processes are to be investigated or actual plant efficiencies determined. It may be used to study and standardize ordinary methods of plant control, or resorted to in any case requiring definite knowledge of the true natural gasoline content of natural gases. It employs the principle of separation by fractional distillation, which is the only known method capable of analytically separating natural gases and quantitatively determining their constituents. As such, it is being successfully used by a number of commercial laboratories which have been in touch with the present work during the past several years.

Definition "Natural Gasoline" Content

In order to develop an analytical method for the quantitative determination of some one substance in a mixture of other substances, it is obviously necessary to define clearly the nature of the one substance sought. Strangely enough, this usually simple requirement has presented a most perplexing problem in the present instance, for entire agreement has never been reached in the natural gas industry as to just what is meant by the term "natural gasoline." It is generally agreed that "natural gasoline" consists of a mixture of hydrocarbons which may be condensed from natural gas and that when necessary this condensate should be commercially manageable and capable of safe transportation. But just what the exact chemical composition of this condensate may be is a question which can not be answered. Because of the different character of natural gases from various fields, and because of the difference in local requirements of refiners, what is considered "natural gasoline" in Pennsylvania may not be "natural gasoline" in Texas, and a California or Wyoming "natural gasoline" may not be recognized as such in either of the first two localities. Nor, for that matter, does perplexity cease with the consideration of the geographical environment of this problematical compound. A perfectly respectable "natural gasoline," born of the winter months might find its reputation for sobriety entirely reversed during the hot days of summer. So it is that geographical and meteoroligical conditions conspire to confuse the identity of the substance which we must determine by analysis without knowing just what it is we are to determine.

With this troublesome situation as a beginning, it may seem difficult to develop a definition of the term "natural gasoline" content. However, a workable definition based on the two factors of chemical composition and vapor pressure, seems possible and desirable.

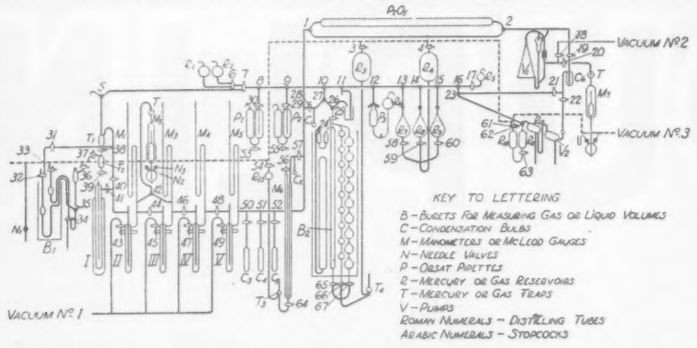


Figure 1—Assembly drawing of the complete apparatus. This unit may be used for research as well as control work. It may be simplified for routine analysis.

Vapor Pressure Criterion

Vapor pressure becomes one criterion since present Interstate Commerce Commission shipping regulations are formulated with respect to this property. With an arbitrary classification of petroleum condensates once established on such a basis, the producer of natural gasolines must then be directly concerned with the vapor pressure of his product.

On the other hand it is obviously possible to produce hydrocarbon condensates of an infinite variety of percentage compositions, all of which may possesses an identical vapor pressure at some fixed temperature. Natural gas is composed largely of the saturated hydrocarbons, of which the proportion ordinarily making up the condensate called "natural gasoline" may be of the order of magnitude of 1 or 2 per cent of the total gas. The vapor pressures of these components at once establish the fact that pentane and other hydrocarbons of the series of higher boiling points may be safely included as properly belonging to the condensate to be called natural gasoline. The further fact is evident that some butane may be included in such a mixture without exceeding the vapor pressure requirements. In practice small percentages of propane or even ethane are actually held in solution with the desirable components, although present developments in "stabilization," which include the use of a simple rectifying column, are tending to correct this error. It is apparent that small traces of propane will appreciably increase the saturation pressure of such a mixture, and cause inexcusable "weathering" losses. Rafferty and others have advanced interesting data to show the relative changes of vapor pressure caused by butane and propane present in condensates of pentane and higher boiling hydrocarbons. Whether or not these data are entirely correct they certainly show the proper trend.

Maximum of Condensate

From this simple consideration of vapor pressures, it follows that for any one natural gas of definite composition, there is a definite maximum amount of condensate, possessing a fixed vapor pressure (p) at some fixed temperature (T), which can be extracted from this gas, and that when this maximum yield is obtained the composition of the condensate is perfectly definite. The percentage composition and volume of this maximum amount of condensate will depend entirely on the original composition of the gas, and the arbitrary saturation pressure and temperature selected. In the case of a "natural gasoline" this condensate will contain all of the pentane and hydrocarbons of higher boiling

(Continued on Page 170)

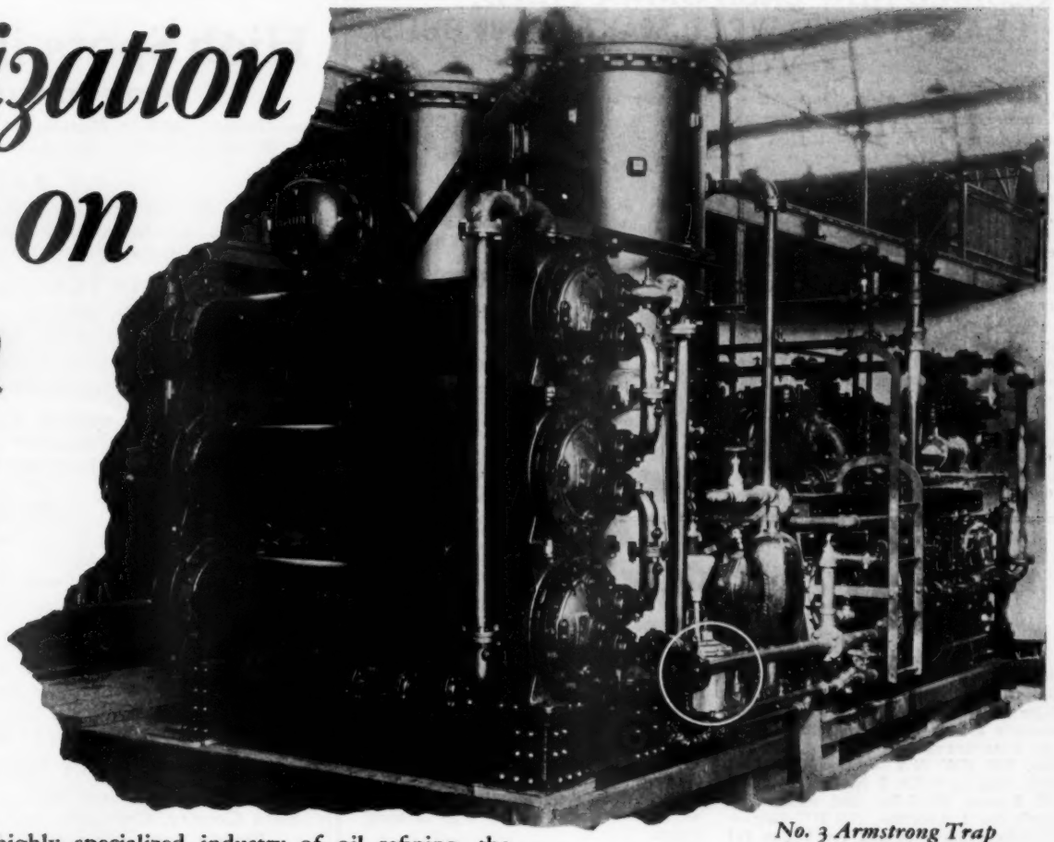
TABLE 4—COMPARISON OF RESULTS OBTAINED BY METHODS DESCRIBED WITH THOSE OBTAINED BY EXISTING FIELD AND LABORATORY METHODS

Natural gas sample—	"Natural gasoline" content expressed in gallons per million cubic feet— From the direct measurement in the liquid phase. Vapor pressure 10 lbs. per square inch (gauge) at 100°F. (1)	From calculations of vapor phase determinations. Vapor pressure 10 lbs. per square inch (gauge) at 100°F. (2)	Reported from oil absorption methods[1]	Deviation from methods (1) and (2) oil absorption	Percentage difference from methods (1) and (2)	Reported from charcoal adsorption methods[1]	Deviation from methods (1) and (2)	Percentage difference from methods (1) and (2)
C3. Pennsylvania, untreated	643	640	....	....	....	497	(1) —146	—22.7
C4. Pennsylvania, treated	170	174	....	....	....	182	(1) +12	+7.1
C5. Wyoming, untreated	2,008	2,021	....	....	....	1,300 1,380 1,600 1,450 1,570 1,620	(1) —708 —528 —408 —558 —438 —388	—35.3 —31.3 —20.3 —27.8 —21.8 —19.3
X1. Pennsylvania, untreated	1,064	1,052	944 (1) —120 1,043 —21	—11.3 —2.0		1,290	(1) +226	+21.2
X2. Pennsylvania, untreated	....	270	210 (2) —60 193 —77	—22.2 —28.5		276	(2) +6	+2.3
X3. Pennsylvania, untreated	....	644	465 (2) —179 453 —191	—38.5 —42.2		564	(2) —80	—12.4
X4. Pennsylvania, untreated	....	6,520	5,839 (2) —681	—10.3		6,448	(2) —72	—1.1
X5. Ohio, untreated	....	806	....	....	....	644 469	(2) —152 —337	—18.9 —41.8
X6. Oklahoma	....	306	148 (2) —158	—52.1		154 135 120 166 138 135 158 162 133	(2) —152 —171 —186 —140 —168 —171 —148 —144 —173	—49.7 —55.4 —60.8 —45.8 —55.6 —55.9 —48.4 —47.1 —56.6
X7. Texas, treated	....	380	....	....	....	211	(2) —169	—44.5

[1]Figures are given for several modifications of the same method where available. Braced figures indicate check anaylses obtained by identical procedure. Other figures are, in general, averages from an unreported number of determinations. The figures in parentheses indicate the method used.

*Associate Chemist, Bureau of Standards. Publication approved by the Director of the Bureau of Standards, Department of Commerce, Washington, D. C.

Specialization counts on steam traps too—



No. 3 Armstrong Trap draining preheater on an absorption plant. Note that no special supports are required.

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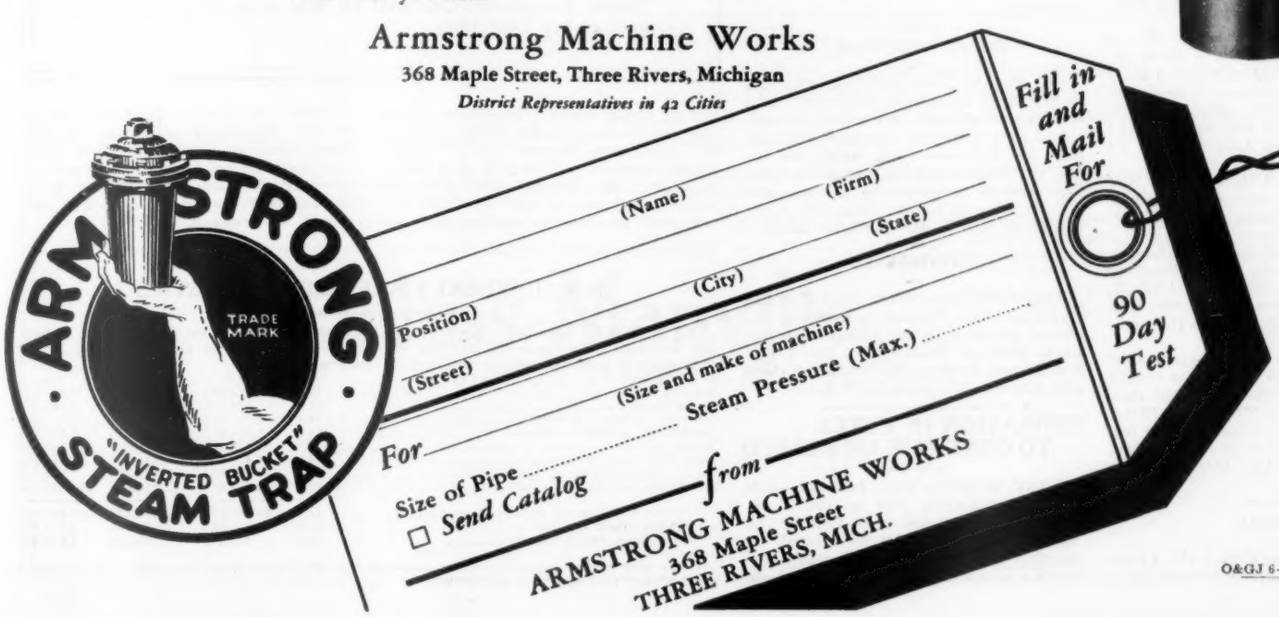


O&GJ 6-27-Gray

POSSIBLE NEW CALIFORNIA FIELD; CLARKE ZONE WELL MAKES 4,000 BBLS.

By L. P. Stockman

LOS ANGELES, Calif., June 25.—Western Gulf Co.'s wildcat, located on the Hollister ranch, approximately 45 miles west of Santa Barbara, 8 miles west of Gaviota Pass and 9 miles from Point Conception in Santa Barbara County, prematurely blew out flowing at the rate of 25,000,000 feet of gas daily. The well is making considerable water and another shutoff will be made as soon as possible as indications point to probable discovery of a new oil field.

Marland Oil Co. will test out its wildcat in the Bradley area of Monterey County where hard faint colored sand reacted favorably to acetone test at 5,950 feet.

Oscar Howard's No. 6 Hathaway showed a potential of 4,000 bbls. daily from the deep Clarke zone at Santa Fe Springs from a depth of 8,006 feet. This well indicates that substantial production may be anticipated from later development of Clarke zone as the well blew in with practically no stimulation as swab was run only three times.

Doyle Petroleum's No. 1 Weir, in new extension of Maricopa Flats section in Midway Sunset Field of Kern County, blew in prematurely flowing at the rate of 1,000 bbls. daily from 3,390 feet with drill pipe in the hole. The crew is circulating mud to kill and will land string of 11-inch preparatory to completion as the well is flowing from 20 feet of oil sand. This well, together with North American's No. 1, Sunset extension, which blew out for the second time a few days ago and wrecked the derrick definitely proves up this recent extension of good production and with 15 drilling projects under way developments indicate the probable completion of several large flowing wells during the next 30 days.

Late News from the Field

OKLAHOMA

Four new locations have been made in the Oklahoma City Pool since the Sinclair Oil & Gas Co.'s well in Section 30-11-2w made a commercial producer. The locations are as follows: Indian Territory Illuminating Oil Co.'s No. 2 S. Bodine, SE NW NW Section 30-11-2w; same company's No. 1 N. Emerson, NE SW Section 30-11-2w, and same company's No. 1 Anderson, NE NW Section 30-11-2w. Cellar is dug for Coline Oil Co.'s No. 1 Clover, NE SE Section 25-11-3w.

Magnolia Petroleum Corp. and Pierce Petroleum Corp.'s No. 1 Hughbanks, SW SE NW Section 17-7-4, Pottawatomie County, made 1,184 bbls. after it was plugged back from a total depth of 4,178 feet to 4,175 feet. The well is producing from Simpson, the top of which was at 4,174 feet.

Warner-Quinlan Oil Co.'s No. 1 Bettis, NE SE Section 18-7-4, Pottawatomie County, has the top of the Viola at 4,065 feet and still drilling in it at 4,128 feet. It had 3,500 feet of oil in the hole.

The Mid-Kansas Oil & Gas Co.'s No. 1 Fortson, C SW NE Section 24-11-3w, Oklahoma County, had 4,000 feet of oil in the hole at a total depth of 6,370 feet and is fishing for tools after making one flow in the siliceous lime. Same company's No. 2 Fortson, C NW NE Section 24-11-3w, Oklahoma County, also had a good showing of oil and was drilling deeper at 6,414 feet.

The Shell Petroleum Corp.'s No. 8 McCully, SE SW SE Section 30-19-4w, Logan County, is an old well drilled deeper in the Wilcox sand from the old depth of 6,016 feet to 6,034 feet, where it started to produce 275 bbls. an hour, and averaged 195 bbls. an hour the first 24 hours, gauge of June 25.

J. S. Cosden's No. 1 Gardner, NE NW Section 31-19-4w, Logan County, made 1,192 bbls. in 24 hours at 5,930 feet, notwithstanding a fishing job.

The discovery well in the Oklahoma City Pool owned by the Indian Territory Illuminating Oil Co., No. 1 fee, C SE SE Section 24-11-3w, produced 2,275 bbls. of oil and 893 bbls. of water on the gauge of June 25.

The tenth well to make a commercial producer in the Asher Pool is the Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 3 Laster, NW SE NE Section 19-6-4. It had the top of the Viola at 3,818 feet and the first show of oil at 3,862-75 feet, where it produced 240 bbls. in seven hours.

KANSAS

The Shell Petroleum Corp.'s No. 1 Community, in the townsite of Greenwich, in Section 15-26-2, Sedgwick County, Kansas, flowed 990 bbls. in nine hours on Monday morning's gauge from a stray horizon at 2,922-24 feet. The first 19½ hours it had flowed 1,555 bbls. and made as high as 116 bbls. an hour.

The Phillips Petroleum Co.'s No. 1 Johnson, in Section 9-13-19w, the latest wildcat drilled in Ellis County, northwest of Hays, swabbed 624 bbls. of oil the first 33 hours. Additional tanks are being erected and the big pipe is being pulled.

The Gypsy Oil Co.'s No. 1 Williams, Section 16-35-3w, Sumner County, flowed 1,076 bbls. of oil from the Wilcox sand at 4,768-82 feet, on the gauge of June 25.

WEST TEXAS

FORT WORTH, Tex., June 25.—Gulf Production Co.'s No. 7 Waddell, Crane County, drilling at 2,470 feet in hard lime, has 250 feet of oil in the hole, corrected gravity 32.29; top of pay 2,428 feet.

GULF COAST

HOUSTON, Tex., June 25.—Barbers Hill production was materially boosted at the opening of the week with the completion of Sun Oil Co.'s No. 2 Chambers on the south side of the dome, which came in flowing an estimated 2,400 bbls. of pipe line oil daily from the deep sand at 5,489 feet. The oil is approximately 30 gravity.

ROCKY MOUNTAIN

The Prairie Oil & Gas Co.'s No. 74, in Section 11-26n-90w, Lost Soldier Field, Sweetwater County, Wyoming, is estimated as a 2,000-bbl. potential producer from the Sundance sand, which lies below the Dakota and Lakota formations. The well is permitted to produce 900 bbls. a day. It is the company's sixtn producing well in the Sundance sand.

CALIFORNIA

LOS ANGELES, Calif., June 25.—The Barnsdall Corp. finished its eleventh successful producer in the Elwood Field of Santa Barbara County when No. 7 Bell Luton came in doing 3,500 bbls. of clean pipe line oil daily from 3,517 feet.

PRORATION IN YATES TO CONTINUE INCREASED

FORT WORTH, Tex., June 25.—Following the hearing held by the Texas Railroad Commission this morning on Yates Pool proration, it was stated, the question of increasing the allowable production of the pool and extending of proration would receive immediate attention and an official order would be issued in a short time. Representatives of companies operating in the pool gave sworn testimony, all agreeing that proration should continue. It was also the consensus of opinion that opening the wells to allow an increase in production to 130,000 bbls. daily would in no way cause waste of gas or oil there being sufficient carriers to handle this amount daily. It was also felt that this would not dissipate the oil-gas ratio but that it may be benefited.

High Spots in Field News

NORTH LOUISIANA—ARKANSAS

Deeper sand in Mount Holly district.

Richland Parish well blows out and forms crater.

KANSAS

Four wildcats in Kansas are producers. Ellis, Russell and Sedgwick Counties have successful tests. New work in Sumner and Cowley Counties.

NORTH TEXAS AND PANHANDLE

Promise of new shallow pool in Cooke County and extension of Bulcher Pool. Good showing in deepest well southeast of Electra in Wichita County.

SOUTHWEST TEXAS

O. W. Killam well in Bruni Field produces 40,000,000 feet of gas daily. Operators in Webb County expect oil.

Serpentine gets first good oil showing in San Antonio section.

OKLAHOMA

Shell Petroleum Corp. well in Logan County, drilled deeper, makes 4,500 bbls.

Operators in Oklahoma City Pool promise orderly development. Area believed rich in oil.

GULF COAST

Yount Lee Oil Co. well on Jennings Dome drilling below 7,400 feet, new deep record for Gulf.

At Barbers Hill Sun Oil Co.'s No. 2 Chambers is flowing estimated 2,400 bbls. of 30 gravity.

ROCKY MOUNTAIN AREA

Lea County, New Mexico, well proves disappointment. Bent County, Colorado, test in granite.

Prairie company well in Lost Soldier Field, Wyoming. estimated 2,000-bbl. producer from Sundance.

WEST TEXAS

Operators in Yates Pool agree that proration should continue and be raised to 130,000 bbls.

Taylor Link Co. discovery 18 miles west of Yates Pool now believed to have opened new pool.

CALIFORNIA

Santa Fe Springs output jumps following opening of curtailed production.

Barnsdall corporation finished its eleventh producer in Elwood doing 3,500 bbls.

Western Gulf Co. wildcat, 45 miles west of Santa Barbara, blew out at rate of 25,000,000 feet of gas and may point to new field.

Oscar Howard's No. 6 Hathaway in deep Clarke zone, Santa Fe Springs, showed potential of 4,000 bbls. at 8,006 feet.

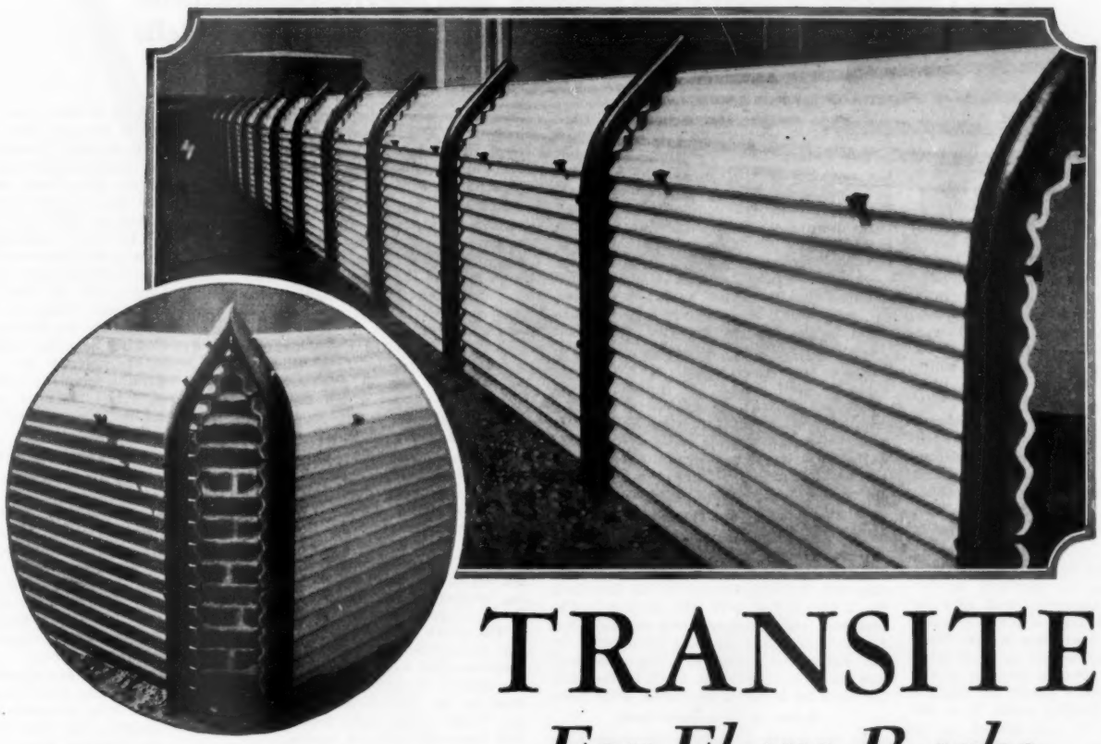
Doyle Petroleum Co. well in Maricopa Flats extension blew in doing 1,000 bbls.

A. P. I. WEEKLY REFINERY STATISTICS

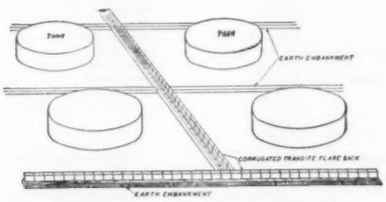
NEW YORK, June 25.—The first of the weekly reports to be made by the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks—was issued today as follows:

	(1)	(2)	(3)	(4)
East Coast	89	3,062,566	6,484,905	7,750,624
Appalachian	84.6	684,141	1,227,091	1,040,174
Indiana, Illinois, Kentucky	97.3	2,100,949	7,002,638	3,033,552
Oklahoma, Kansas, Missouri	66.4	1,575,087	3,896,120	3,762,080
Texas	67.9	2,868,999	4,326,635	10,902,538
Louisiana and Arkansas	94.6	1,420,830	2,241,793	5,575,554
Rocky Mountain	90.3	493,819	1,884,206	533,342
California	95.4	4,699,462	11,061,085	101,828,785
Total U. S., week ending June 22	84.6	16,905,853	38,124,472	134,426,649
Texas (Gulf Coast)	50.4	1,556,930	2,806,805	5,606,629
Louisiana (Gulf Coast)	97.5	932,746	1,963,216	4,502,103

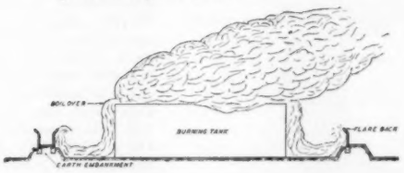
(1) Per cent refinery capacity represented. (2) Crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Large view above shows typical Transite flare-back construction. Transite retains its efficiency and shipshape appearance permanently. In the circle is shown approved corner construction.



Method of segregating portions of tank farm from each other by means of Transite flare-backs.



Action of Transite flare-backs in turning back wave of burning foam.

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No Mad Rush in Oklahoma City Pool

Operators in That Field Promise an Orderly Development. Area Believed To Be Rich in Oil. Important New Wells

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

One of the most important wells in Oklahoma in many a day and a well that is being watched closer than any other since Seminole reached its peak, is the Sinclair Oil & Gas Co.'s No. 1 Stamper, NE SW NW, Section 30-11-2w, Oklahoma County. The new well is a half a mile southeast of the discovery well and was flowing 104 bbls. an hour late Thursday at 6,456 feet, while still drilling ahead in the Siliceous lime of the Arbuckle series.

The well started flowing late Wednesday at 6,430 feet where it first gauged 55 bbls. an hour. With deeper drilling it has increased its flow each foot. The first 24 hours' gauge was 2,474 bbls., ending at 7 a.m. Friday, June 21. The oil tests 37 gravity, and no water is showing.

The finding of oil in the deep horizon in this well proves the territory to the southeast of the discovery well and its performance is a source of much encouragement to all the operators in that field, some of whom had begun to look with disfavor upon the area on account of the failure of the shallow sands to produce oil in any of the drilling wells. It is the second producing oil well drilled in, in the new area south of the capital city.

The discovery well in the field, the Indian Territory Illuminating Oil Co.'s No. 1 fee, C SE SE, Section 24-11-3w, Oklahoma County, produced 2,523 bbls. of oil and 726 bbls. of water on June 21.

Sinclair Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Kinter, NW SE, Section 30-11-2w, Oklahoma County, produced 1,475 bbls. of pure gasoline and it was still making between 40,000,000 and 50,000,000 feet of gas on the gauge taken June 20.

Other wells that are expected to reach the deep pay horizon in a short time are Mid-Kansas Oil & Gas Co.'s two Fortson wells in the NE, Section 24-11-3w, which are northwest of the discovery well. If they make commercial producers it will prove up 1½ miles of acreage that is expected to yield big returns from the Siliceous lime.

Prairie Oil & Gas Co., Phillips Petroleum Co., and Tom Slick Oil Co.'s No. 1 Sudick, C NE NE, Section 8-10-2w, Cleveland County, about 6 miles southeast of the discovery well, had the top of the Siliceous lime at 6,590 feet. While drilling ahead they encountered a stray sand at 6,623 feet. At 7 feet in, the sand was still dry.

An Orderly Development

At a meeting of the operators of the new field south of Oklahoma City, Friday, June 21, orderly development of the field was assured and the second series of test wells was outlined by company representatives. Thirty-one new locations were approved, 10 more locations than in the first series, several of which have not been drilled. In addition to these Joe Cromwell, Wirt Franklin, Indian Territory Illuminating Oil Co., and Foster Oil Co. have approved 20 locations on their Trosper Park properties, on which only one well is now drilling.

While these locations are authentic, they are made now so that each operator will know what the other is doing and intends to do. They are only tentative and the wells will not be drilled until each company deems it necessary. The wells will be spaced to take care of offsets and aid each operator in defining the extent of the producing area.

If all the new locations were staked and wells started the pool would soon assume large proportions.

The Indian Territory Illuminating Oil Co. and Foster Oil Co. get the majority of these new locations, Cromwell and Wirt Franklin Oil companies have had three approved, the Coline Oil Co. and Sinclair Oil & Gas Co., two. Mid-Kansas Oil & Gas Co. did not ask for any new locations. Prairie Oil & Gas Co. announced that it did not have any in mind for the present, but expected to drill more wells in the SE Section 19-11-2w, upon the completion of its No. 1 Huddleston.

Since the Sinclair Oil & Gas Co.'s Stamper well found oil in commercial quantities several of the operators who completed their wells in the shallow gas sands are now rigging up tools on these wells to drill them to the deeper pay horizon. Mudding off the gas is getting under way and drilling is to start soon.

Wilcox Pay in Township 6-8

The finding of Wilcox sand oil in the extreme eastern part of Seminole County, and the first to be found in Township 6-8, was the Sinclair Oil & Gas Co.'s No. 2 Davis, SW NW SE, Section 7. The test was one location north of their No. 1 Davis which found its production in the Viola and Simpson. The new well had the Wilcox sand at 4,476-79 feet and the first 24 hours it produced 4,024 bbls.

Asher a Disappointment

In the Asher area 10 water wells have been drilled in during the past week. All of these wells found water in the Viola lime while some also had water in the Simpson. The majority of field operations in that pool are shut down and most of the operators are waiting for some one else to test the Wilcox sand.

The only companies that have largely benefited by the finding of oil in that area was the Wrightman Petroleum Corp. which sold out its holdings to the Tom Slick Oil Co. for a reported consideration of more than $1,000,000, and on which the purchaser has one producing well and several water wells in the Viola horizon, and the Mardor Oil Co. which also sold out its holdings to Tom Slick Oil Co., consisting of the 30 acres offsetting the discovery well on which the Tom Slick Oil Co. has two small producers in the Viola lime.

The eight producing wells in the pool have a daily average production of 8,800 bbls. It is very doubtful at this time just how many more oil wells will be found in that area. All the tests in the townsite are shut down and no doubt most of them will be abandoned at their present depth. It has been the first big drilling campaign in the Seminole and St. Louis areas to develop into a net loss.

The ninth well at Asher to find oil is the Independent Oil & Gas Co.'s No. 1 Gardner, NE SW SE Section 19-6-4, Pottawatomie County, the most southern well in the field to produce to date. It has Viola at 3,798-99 feet and swabbed 266 bbls. the first 24 hours.

The finding of water in the Wilcox sand at Asher has just about finished drilling in that area. Tom Slick Oil Co.'s No. 2 Bledsoe, SW NW Section 20-6-4, Pottawatomie County, has the deep Wilcox sand at 4,018-21 with a hole full of water. The Viola and Simpson also carried water. The crew is landing 6-inch casing at 4,025 feet to make a deep test.

The first disappointment in the 7-4 area is the Magnolia Petroleum Corp. and Pierce Petroleum Corp.'s No. 1 Hughbanks, SW SE NW Section 17-7-4, Pottawatomie County. The well produced 1,521 bbls. on Friday's gauge and stopped flowing Saturday with 1,000 feet of water in the hole. It has been making its production from the Simpson at a total depth of 4,176 feet. It produced as high as 2,170 bbls. a day since it was first drilled in.

Township 7-4 Looks Good

The area between St. Louis and Pearson Switch Pools is holding the attention of the industry. The big play has been in Sections 8, 9, 16 and 17, Township 7, Range 4, Pottawatomie County, and also in Sections 1, 2, 7 and 4. The first Wilcox sand well outside of St. Louis proper was drilled by the Independent Oil & Gas Co., its No. 1 Barrows, SW NW NW Section 1-7-4, which has been producing around 500 bbls. a day. Other wells in that area are producing from the Hunton, Viola and Simpson. It is expected that this township will get more development this summer than any other in the Greater Seminole area.

Seminole Production

Production of the Greater Seminole area for June 22 is as follows:

Pools—	Wells	Bbls
Little River	339	78,108
Carr City	45	13,595
Maud	121	13,381
Mission	115	36,182
Bowlegs	303	36,005
Earlsboro	305	67,424
Seminole	273	33,770
East Seminole	13	5,023
Searight	74	11,723
St. Louis	365	84,822
Asher	8	8,655
Total	1,961	388,685

The west side of Township 9-7, Seminole County, is looking good for Wilcox sand production. The following companies have recently completed wells in that region. Continental Oil Co.'s No. 1 Johnson, SE NW Section 18-9-7, Seminole County, had Wilcox sand at 4,205-17 feet, where it made 2,140 bbls. a day on air; Marland Production Co. and Sinclair Oil & Gas Co.'s No. 1 Perry, NW NE SW Section 18-9-7, found the Wilcox sand at 4,300-10 feet, and swabbed 743 bbls. from that sand and is also making 150 bbls. from the Hunton lime; Sinclair Oil & Gas Co.'s No. 1 Coody, SW NE Section 18-9-7, Seminole County, swabbed 1,250 bbls. from the Wilcox sand at 4,240-55 feet; the Devonian Oil Co. found 2,000 feet of water in the Wilcox sand at 4,293 feet and was drilling deeper at 4,365 feet in its No. 1 Harjo, NE NW NW Section 18-9-7, Seminole County; Marland Production Co.'s No. 1 Boring, NE NW SE Section 17-9-7, Seminole County, had a small showing of oil in the Gilcrease sand at 3,350-77 feet, from which they swabbed 36 bbls. of oil before shooting the well.

Wilcox Well in 7-7

The only large well completed in the new Wilcox sand pool in Township 7-7, outside of the Mid-Continent lease, was the Gypsy Oil Co.'s No. 2 Payne, SW NE NE Section 5-7-7, Seminole County. It had Wilcox sand at 4,260-66 feet and flowed 2,952 bbls. the first 24 hours. The well is to be shot and put on air lift, and is the fifth good producer in the pool. All the others are on the Mid-Con-

(Continued on Page 78)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location— Remarks:

Smith Bros.' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w ..... Shut down 385 ft.

Washoma Oil Co.'s No. 1 Acre, SW cor. NE Sec. 14-24-11w ..... Rig.

BECKHAM COUNTY

F. Coogan's No. 2 Holmesburg, SE NW Sec. 25-9-25w .. Drlg. 1,560 ft.

Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Shut down 2,402 ft.

Trees Oil Co.'s No. 1 Rodgers, SW cor. SW Sec. 30-8-25w ..... Drlg. 2,310 ft.

Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w ..... Shut down 1,465 ft.

Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 35-9-22w ..... Shut down 1,500 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down; renewing leases.

Washoma Oil Co. and others' No. 1 Phillips, C NW SW Sec. 13-19-10w ..... Shut down 1,365 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor. Sec. 8-6-13w .. Shut down 535 ft.

J. B. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w .. Shut down 150 ft.

W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut down 3,130 ft.

Phillips Pet. and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w ..... Drlg. 6,460 ft.

COAL COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 Harris, SE NE Sec. 10-1-11e ..... Shut down 1,975 ft.

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e .... Drlg. 675 ft.

Indian Territory Illuminating Oil Co.'s No. 1 Cook, SW cor. NW Sec. 10-1-11 ..... Drlg. 7,340 ft.

J. S. Cosden's No. 1 Richardson, NW cor. NE NE Sec. 6-2-8 ..... Fishing 1,855 ft.

McGinley & Sigler's No. 1 Willsey, NW cor. SE SE Sec. 7-2-8 ..... Rig.

E. W. Whitney's No. 1 Brown, C SE NE Sec. 10-2-8 .... Shut down 202 ft.

COMANCHE COUNTY

Muse et al's No. 1 Cross, NW SW SW Sec. 4-1-9w ..... Drlg. 1,115 ft.

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w .. Shut down 4,055 ft.

CREEK COUNTY

Shaffer et al's No. 1 Moore, SW SE SE Sec. 3-18-9 .... Spudding.

CUSTER COUNTY

W. E. Witt's No. 1 Wellman, C SE Sec. 1-14-14w ..... Rig and tools.

GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w ..... Drlg. 5,115 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w .. Spudded and shut down.

J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.

GRANT COUNTY

Baucher et al's No. 1 Deadman, SW SE Sec. 12-28-4w ... Location.

Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w ..... Shut down 5,640 ft.

(Continued on Page 102)

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Four Kansas Wildcats Are Producers

Ellis, Russell and Sedgwick Counties Scenes of Successful Test Work. New Work in Sumner and Cowley Counties

By W. A. Spinney
Staff Correspondent, Kansas Fields

Four wildcat wells found oil production in commercial quantities in western Kansas the past week, one in Ellis and two in Russell, and one in the townsite of Greenwich, Sedgwick County.

The Phillips Petroleum Co. opened a possible oil pool in No. 1 Johnson, SW NE Section 9-13-19w, Ellis County, when Gorham pay was uncovered at 3,593-95 feet. The well swabbed 340 bbls. in 12 hours. It is located 9 miles northwest of Hays, and is the third commercial producer the Phillips Petroleum Co. has drilled in the past year in Ellis County.

The block was originally owned by Thomas & Moncrief, who had blocked 13,000 acres, which they split up by assigning the Phillips company 4,000 acres on drilling agreement; selling 3,000 acres to several other major companies and retaining 6,000 acres.

The Phillips Petroleum Co. has been one of the most aggressive pioneers of western Kansas, but in keeping with the oil conservation movement has held back the development of its discoveries. A recent letter to stockholders declares that its two wells northeast of Hays, which are 3 miles apart, leads to the belief that a new oil pool has been discovered.

Only recently the president of the state normal school at Hays announced that several hundred acres of land belonging to the school will soon be open for oil and gas lease bids. Now that oil has been found northeast and northwest of Hays, it is almost certain that the area will see considerable oil development this summer.

Another Pool Discovered

Another pool in western Kansas has apparently been discovered by the Prairie Oil & Gas Co. and Tom Slick Oil Co. in southeastern Russell County in the SW NE Section 36-15-13w. The well had the Gorham pay at 3,352-55 feet, where it filled up 2,800 feet with oil at once. Operations were shut down to await the arrival of the production superintendent.

The new well is midway between the pool north of Hutchinson in Rice County and the old Russell County Field. The first prospecting in this area was done five years ago by the Marland Oil Co. on the same block, but half a mile southwest of the present well. The original test had a good showing of oil and it was on the strength of this showing that the Tom Slick Oil Co. started this test, which seems likely to have opened a new producing area.

The third wildcat test to show oil is Allison & Fitzwilliams' No. 1 Mohenny, NW SE Section 5-14-12w, Russell County. The test had the top of Oswald lime at 2,952 feet, where it found a good showing of oil. The crew is running casing to make a production test.

The Shell Petroleum Corp. has uncovered a stray producing horizon in its No. 1 in the townsite of Greenwich, on town lot 17, Block 7, the well being known as No. 1 Community. The test encountered a sandy chat at 2,922-24 feet where it filled up to the top with oil before the tools could be removed from the hole, and started slopping over. When the well was shut in it was estimated at 40 bbls. an hour. It is awaiting tankage and a pipe line connection. A pipe line is being constructed from the Lygrisse Pool, which is only a short distance northeast of the new well.

Five other rigs are up in the townsite and four are drilling. The Plains Oil Co.'s No. 1 fee is within a few feet of the oil depth. It was drilling at 2,900 feet Saturday, June 22. Derby Oil Co. and others were drilling at 1,190 feet; T. A. Deal was drilling at 1,600 feet; W. F. Kenny's No. 1 M. Richard, a rotary rig and tools, is drilling at 1,900 feet. Roy Ramsey's No. 1 E. Mason is rigged up but is waiting to clear titles.

Sedgwick's New Production Peak

Oil production in Sedgwick County, reached a new high on Tuesday of last week when the total yield was 38,180 bbls. The increase was due to several new wells that swelled the total. Production has been averaging around 35,000 bbls. daily for some time. During the past five weeks the production in Kansas has increased more than 6,000 bbls. daily.

Lario Oil & Gas Co.'s No. 1 Glancy, SW cor., Section 10-26-3e, a wildcat in the western part of Butler County, swabbed 400 bbls. one day last week. The well is to be put on the pump. It is producing from chat at 2,750-61 feet.

A new wildcat test for Saline County has been announced by Templeman Brothers to be drilled 5 miles southwest of Brookville. The location has been staked in the C SW, Section 20-15-5, Saline County, a block of 13,000 acres and will be drilled to a depth of 3,500 feet, drilling operations to start this month.

Another Townsite Disappointment

Richards & Schwartz will plug their well in the townsite of Valley Center after having drilled into the dolomite at 3,419-24 feet and found a good showing of oil. The well was given a small shot which brought in a hole full of salt water, making it necessary to plug the well. It was on city owned property on the south edge of town and was the first town lot well to make a showing for a commercial producer.

Shell Petroleum Corp. is making a production test of the discovery well in the Lygrisse Pool, its No. 1 Lygrisse, by producing it on the air lift. On Tuesday of last week it made 1,355 bbls. in 17 hours on the air lift and 7 hours natural flow. The Shell's other producing well, No. 1 Fisher, swabbed 465 bbls. in 22 hours. Gypsy Oil Co.'s No. 1 Hamant, east offset to the discovery, will also be put on air. It made 314 bbls. naturally in 24 hours while its No. 2 Hamant produced 842 bbls. The latter is the only well in the pool showing water. On a later report the Shell Petroleum Corp.'s No. 1 Lygrisse made 1,847 bbls. in 24 hours on air lift. This is the first time the air method of flowing wells has ever been used in Sedgwick County. The Gypsy Oil Co. will apply the air lift to its wells on the Hamant lease if that method proves successful.

Barnsdall Oil Co.'s No. 1 Lank, C SW, Section 35-18-21w, Ness County, swabbed 42 bbls. of oil and 20 bbls. of water in 12 hours on Wednesday of last week, from the pay at 4,225-29 feet. While this wildcat well is not showing as much production as was expected it indicates that the horizon holds oil and it may prove more productive on other locations.

Developing Township 35-2e

The Prairie Oil & Gas Co.'s No. 4 Olsen, NW NE NW, Section 3-35-2e, Sumner County, is renewing interest in that region. The well is still flowing 800 bbls. a day. Three new locations are getting under way as the result of this well. The first one of these to be started is the Tidal Oil Co.'s No. 1 McEwen, SW cor., Section 33-34-2e, Sumner County, 1½ miles west of the Prairie's new producer. The rig has been completed and the crew is rigging up with prospects of spudding any time now. Another location reported is that of Darby Oil Co. and others, NW cor., Section 35-34-2e, Sumner County, northeast of the Prairie's Olsen well. The rig materials were being moved in on the location. No. 4 Olsen is making considerable water, estimated all the way from 25 to 50 per cent, but all wells in that section of Cowley County produce more or less water with the oil from that horizon.

Marland Production Co. has extended the Smith Pool in the northwest part of Cowley County, by drilling in No. 1 Liggert, NE NW, Section 15-31-3. The well had Bartlesville sand at 2,989-3,107 feet. The hole filled up several hundred feet with oil. After a shot the well will be cleaned out and given a production test. It extends the pool a quarter mile to the southwest.

The Prairie Oil & Gas Co.'s No. 5 Youle, NW NW, Section 15-32-4, Cowley County, got sand at 3,255-60 feet from which it produced 420 bbls. in 12 hours. Same company's No. 6 Youle is expected to reach the lime horizon in a short time and as it is offset by producers should add another good well to the pool.

The Gypsy Oil Co.'s No. 1 Kincaid, NE NW, Section 18-29-5w, Kingman County, cored chat which was found to be dry from 3,953-97 feet. The 8-inch casing will be cemented at 3,997 feet and standard tools rigged up preparatory to drilling in. This test has reached an interesting depth, but it will be some time before anything definite is known as it will take about a week to standardize.

Deep Test in Cowley

The Prairie Oil & Gas Co. has made a location to drill a deep test in the southern part of Cowley County. The well will be known as No. 1 Demott, SW NE, Section 14-34-4, and will be drilled to a total depth of 3,500 feet, which will make it a Siliceous lime test. It is in semi-wildcat territory and close to another hole that was drilled several years ago which produced 15,000,000 feet of gas from the Stalnaker sand at 2,200 feet, but was later abandoned. The same company has purchased a one-half interest from the McKnab-Bess Oil Co. in its Roberts and Brooks leases. A new location has been staked on the Roberts lease in Section 7-33-3, Cowley County, north of the Rainbow Bend Pool.

Bu-Vi-Bar Oil Co. and others completed a good well in the Valley Center Pool in their No. 3 Wright, SW NE SE. Section 12-26-1w, Sedgwick County, which extends the south end one location west. The oil is coming from the dolomite at 3,356-61 feet, from which it flowed and swabbed 1,101 bbls. the first day. The

(Continued on Page 133)

WILDCAT OPERATIONS IN KANSAS

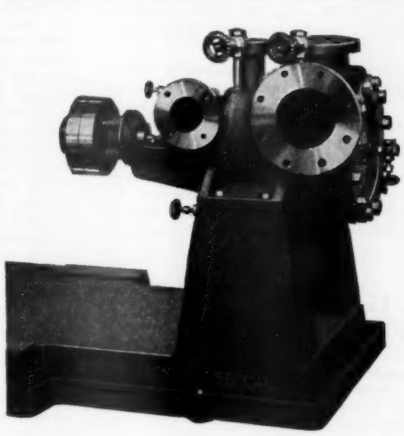
(Descriptions are East unless otherwise marked)

Company, farm and location—	Remarks:
BARBER COUNTY	
Skelly Oil Co.'s No. 1 Temple Ranch, Sec. 13-34-15w	Rig.
Barbara Oil Co.'s No. 1 Angel, NW cor. NE Sec. 14-33-13w	Drlg. 3,890 ft.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w	Rig on ground.
Allison & Fitzwilliams' No. 1 Morrisse, C NW SE SE Sec. 9-30-12w	Fishing 3,225 ft.
BARTON COUNTY	
Gobel & Bending's No. 1 Bartlett, SW cor. SW Sec. 28-17-15w	Shut down 1,190 ft.
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft.
BUTLER COUNTY	
White Eagle's No. 1 Bachelder, SW cor. Sec. 17-25-3e	Drlg. 1,650 ft.
Crawford et al's No. 1 Thompson, NW cor. SW Sec. 2-24-3e	Drlg. 210 ft.
Aladdin Petroleum Co.'s No. 1 Bronsenger, NE cor. NE SW Sec. 24-27-3	Drlg. 1,360 ft.
Shell Petroleum Corp.'s No. 1 Thiesstin, C SE SW SE Sec. 10-24-3	Drlg. 2,892 ft.
Smith & Ash's No. 1 Donnelly, NE cor. NE Sec. 8-24-6	Drlg. 3,130 ft.
CHASE COUNTY	
Mariand Prod. Co.'s No. 1 fee, SW NE Sec. 8-21-8e	Drlg. 2,320 ft.
COWLEY COUNTY	
J. B. Markley's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 520 ft.
DICKINSON COUNTY	
Cress & Hawky's No. 1 Menli, NE cor. Sec. 12-15-2	Rig on ground.
Johnson's No. 1 Doetwiler, SW NE NW Sec. 32-16-4e	Drlg. 2,885 ft.
Prairie Oil & Gas Co.'s No. 1 Morgan, NW cor. Sec. 26-16-3e	Drlg. 1,400 ft.
Milmac's No. 1 Buhler, SW NE Sec. 28-16-4e	Drlg. 2,083 ft.
ELLIS COUNTY	
T. C. Johnson's No. 1 Robbins, SW NW Sec. 15-14-16w	Drlg. 2,940 ft.
John Brown's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w	Drlg. 3,250 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w	Drlg. 3,395 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w	Spudded and shut down.
Phillips Pet. Co.'s No. 1 Johnson, SW cor. NE Sec. 9-13-19w	Drlg. 3,593-95 ft.; 600 ft. oil in hole.
Phillips Pet. Co.'s No. 1 Schneider, NW cor. Sec. 20-12-17w	Drlg. 3,429-39 ft.; 108 bbls. in 8 hrs.; shut down.
Burger et al's No. 1 Hadley, SW cor. SW NW Sec. 20-11-17w	Drlg. 1,930 ft.
John Brown No. 1 Company's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w	Drlg. 3,250 ft.
ELLSWORTH COUNTY	
The Texas Company's No. 1 Sherman, NE SW Sec. 16-17-6w	Rig.
EDWARDS COUNTY	
British American Oil Co.'s No. 1 McCarty, NE cor. NW Sec. 31-25-17w	Sand 4,666-70 ft.; 14,000,000 ft. gas; shut down.
GEARY COUNTY	
Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5	Fishing 2,170 ft.
GRAHAM COUNTY	
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w	Shut down 3,600 ft.
HARPER COUNTY	
Independent & Reserve Oil Co.'s No. 1 Moulds, C NE Sec. 7-24-1w	Drlg. 1,728 ft.
HARVEY COUNTY	
Deering-Marshall's No. 1 Dick, Sec. 4-25-2w	Fishing 2,345 ft.
McCulloch et al's No. 1 Prouty, NW cor. SW Sec. 3-23-1w	Drlg. 1,300 ft.
Roth & Parrent's No. 1 Brombrowsky, NW cor. Sec. 26-22-1e	Fishing 2,415 ft.

(Continued on Page 105)

reboiler circulation PUMP

PUMPS



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Deeper Sand in Mt. Holly District

This Section of Ouachita County, Arkansas, Attracting Attention and Is Source of Much Discussion

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 24.—Discovery of a deeper producing sand in the Mount Holly district of Ouachita County, Arkansas, may bring that area back into the limelight as the Shreveport division's next "hopeful" since Dixie district of Caddo Parish appears to have slumped so far in so short a time. As yet there is no guarantee that the new sand will anywhere near live up to hopes, but that it made 18 joints of oil in 7 minutes from sand at 2,776-81 feet on drill stem test is receiving respectful attention from all concerned. The well is McDonald Brothers' No. 2-A Wilson, Section 25-15-18, 300 feet south of the discovery well and the oil is coming from 80 to 100 feet below the discovery's production after adjusting elevations. Probably it is on another of the "fingers" described in The Oil and Gas Journal shortly after the discovery well came in and while the geologists were engaged in a more or less heated discussion of the chances and lack of chances of Mount Holly ever amounting to anything in comparison with El Dorado, Smackover, Stephens and Champagnolle, its next-door neighbors on the east, west and south.

The new Dixie district of Caddo Parish appears not so well. Its biggest well, Gulf Refining Co.'s No. 1 Oden in Section 18-19-14, completed June 7 flowing 3,285 bbls. the first 24 hours with drill stem in the hole, sank to 385 bbls. and went dead Friday. Drill stem will be pulled and standard rig installed. Of the other "hot" wells in the district Standard Oil Co.'s No. 1 Hunter, Section 17-19-14, the discovery well, is doing only 12 bbls.; No. 2 in Section 8-19-14 is doing 78 bbls.; No. 1 Oden, Section 18-19-14, 185 bbls.; Gulf Refining Co. No. 1 Oden, arranging to pump; No. 2 Oden, Section 18-19-14, 17 bbls.; Sam Gold No. 1 Hunter, Section 17-19-14, coring at 2,381 feet. All these complete wells had an initial production many times larger than their last 24-hour gauge as represented, and the oldest, Standard Oil Co.'s No. 1 Hunter, has been producing for not more than eight weeks.

The producing horizon is a sandy shale below the Blossom sand. In the Gulf No. 1 Oden there was a true sand. Some of these wells are producing from the Eagle Ford and some from the upper Trinity formations.

Pine Island

Dixie Oil Co.'s deep test in Pine Island, No. 92 Dillon, Section 13-21-15, cored lime, pyrites and shell at 6,173 feet, the deepest drilling well in the entire state. Magnolia Petroleum Co.'s No. 18 Doan-Thigpen in Section 6-20-15, a thickly drilled section of the Oil City district west of Pine Island, also is reaching a thoroughly respectable depth, 4,519 feet where it was in sandy shale, but so far there has been nothing to make one's hair stand on end at the prospects of profitable production below the old exploited horizons.

Much the same situation prevails with Magnolia's No. 1 McCook & Hibbler in Section 22-21-10, Cotton Valley district of Webster which, drilling at 6,190 feet—approximately 400 feet below the deepest production in the field—had more than a show of gas at 5,450 feet. Geologically this well is considerably deeper than the Dixie's No. 92 Dillon and hence ranks with the Humble Oil & Refining Co.'s deep test south of Haynesville—which is still deeper—as one of the most important sources of geological information drilled in this territory in the last two or three years. And as early as this present time, there has been some seriocomic talk of 7,000 or 8,000 foot holes in this division. But there is only one company equipped to go that far and whether it ever will remains to be seen.

There was quite a list of successful completions in the division during the week, scattered all through the territory with most of them, as usual, gas wells. Woodley Petroleum Co. started and completed No. 5 Whitehurst in Section 35-16-12 Elm Grove district of Bossier Parish before it ever got on the report. It was a dry hole at 871 feet.

Gulf Refining Co.'s No. 2 Oden, Section 18-19-14 Dixie district, started off pumping 20 bbls. from a total depth of 2,423 feet. Shreveport Oil Corp.'s No. 3 Muslow, Section 32-21-15, Oil City district, which had been waiting for standard rig to pump from 1,650 feet, plugged back from 3,000 feet, made an initial 10 bbls. Standard Oil Co.'s No. 2 Hunter, Section 8-19-14, Dixie district, pumped 75 bbls. the first 24 hours, total depth 2,416 feet. The Urania district of LaSalle Parish was the location of Gardner, Harper & Brown's No. 11 Harper, Section 26-10-2e, which pumped 75 bbls., 8 per cent water, from 8 feet of sand, total depth 1,508 feet.

Monroe District

There was only one new well in the Monroe district: Magnolia Petroleum Co.'s No. 2 U. S., Section 30-19-5, Ouachita Parish, which, reported last week as the company's proposed deep test, was completed at 2,412 feet, gauging 800,000 feet at 275 pounds. At that, it is a deep producer for the Monroe district; about as deep as any production at all has been obtained by 200 feet. It had passed up about 750,000,000 feet of gas at 275 pounds, total depth 2,225 feet.

In addition to the crater well and Southern Carbon Co.'s No. 1 Tegola, discussed in the wildcat report in this issue, Richland Parish had two other, though much smaller, gassers. Magnolia Petroleum Co.'s No. 2 McCoy, Section 29-16-6 gauged 5,167,000 feet at 1,020 pounds, total depth 2,401 feet—rather shallow in contrast with the average Richland well, and in still more marked contrast with their No. 2 J. Sartor in Section 16-16-6, 2 miles northeast, which was dry at 2,633 feet without having had a trace of gas—and with numerous successful wells at standard depth between them. The same operator's No. 2 C. M. Noble, Section 36-16-5 in the southwest corner of proven territory, gauged 32,000,000 feet at 1,025 pounds, total depth 2,438 feet, after measuring only 2,000,000 feet in round numbers 23 feet higher up. Pressures noted in these last two wells are a trifle higher than the average, even for new wells. Arkansas Natural Gas Corp. completed No. 13 Logan, Section 33-10-12, Pleasant Hill district of Sabine Parish, pumping 10 bbls. at 3,300 feet, the first completion the Sabine Pool has had in more than a year.

Smackover and Champagnolle divided completions in Arkansas, two in the former. Phillips Petroleum Co.'s No. 1 Scott, Section 34-15-15, Ouachita County, pumped 150 bbls., 20 per cent water, the first 11 hours from a total depth of 1,990 feet in the Nacatoch, and Simmons and others abandoned No. 1 Green, Section 3-16-16, Union County, as a dry hole at 2,600 feet in the third, or Graves sand.

Ohio Oil Co.'s No. 2 L. S. Adams in the northeast corner of Section 12-17-14, was a 5,000,000-foot gas well at 3,016 feet—offsetting production on the east and about three-quarters of a mile north of production in the southwest corner of the eastern extension of the pool.

Lion Oil Refining Co. tested salt water with a show of oil at 3,020 feet on No. 1 El Dorado Realty Co., Section 7-17-13, in the southeast corner of the extension, and was coring ahead at 3,028 feet. H. L. Hunt's No. 7 Gregory, Section 10-17-14, about the center of the older producing section of the pool, is waiting orders with 1,200 feet of fluid, 90 per cent water, in the hole from 45 feet of broken sand, total depth 3,242 feet; perhaps a little deep for producers in that part of the field, but Champagnolle is still more or less of an unknown state of affairs even after two years of development.

Eastern Carbon Co. is still having trouble trying to make a well of No. 4 Bryson in Section 8-17-16, Greenwood gas district of Caddo Parish. It tested 5,000,000 feet of gas at 2,773 feet and set 6-inch. On drilling plug it blew out with the same amount of gas and almost as much water; plugged back to 2,330 feet and got salt water with no gas at 2,500 feet; set 2½-inch tubing with packer after drilling out to 2,710 feet and got the same old 5,000,000 feet of gas at 1,025 pounds—and salt water. Just now it is shut down waiting for orders as to what to do.

International Gas Products Co.'s No. 1 Kate Humbel, Section 35-16-6, 1 mile south and 2 miles east of nearest production in Richland, in other words the farthest southeast test drilling in the district, was dry at 2,445 feet—the standard depth for Richland, or close to it—and will go deeper. Palmer Corp.'s No. 1 Miles, 4 miles or so northeast of production on the north edge of the field, has tested dry at 2,428 feet and 2,456 feet, but on last report was busy running drill stem for another test at 2,476 feet. Contrast that with the blow-out crater well at 2,350 feet in Section 20-17-6 with particular regard for the fact that the Palmer well hasn't had any gas yet.

Production Drops

The daily average production of northern Louisiana and Arkansas for the week ending June 22 follows:

North Louisiana

	Bbls.
Caddo, light	9,095
Caddo, heavy	3,405
Homer	3,930
Haynesville	5,200
DeSoto-Red River	3,795
Elm Grove	605
Bellevue	610
Cotton Valley	2,720
Urania	5,920
Pleasant Hill	450
Sarepta-Cartersville	250
Total	35,980

Arkansas

El Dorado	4,600
Smackover, light	6,090
Smackover, heavy	48,560
Stephens	1,030
Nevada County	930
Lisbon	1,250
Champagnolle	7,265
Bradley	100
Total	69,825
Both states	105,805
Last week	106,700
Decrease	895

NORTH LOUISIANA
Bossier Parish

Cartersville — Delaware-Louisiana Development Co.'s No. 4 Bollinger, Section 38-23-11, ran testing tool on 6 feet of sand, total depth 3,914 feet, and got salt

(Continued on Page 129)

RICHLAND PARISH, LA., GAS WELL BLOWS OUT AND FORMS A CRATER

By D. H. Bancroft

SHREVEPORT, La., June 24.—Further emphasis on the necessity of taking no chances in drilling anywhere in or around the Richland Parish gas field was placed early this week when, feeling perfectly safe because of their depth, those in charge of Northern Louisiana Natural Gas Co.'s No. 1 Boykin, Section 20-17-6, on the north edge of the field, ordered a core at 2,350 feet, approximately 100 feet above the average depth of Richland producers, and the well blew in and cratered. Previously, another well a mile or so north had cored at this and surrounding depths and got a small show with salt water; still further back in the past the Richland discovery well had blown out at a lesser depth; wells south and east had had no trouble. But there was only surface casing and 8-inch string set at 900 feet in the hole and the drilling fluid had been thinned. And now the well, estimated to have blown out with 60,000,000 to 70,000,000 feet of gas, is a crater. The first effort to conquer it will be by two relief wells, but if the experience with the Natural Gas & Fuel Co.'s No. 1 Thompson crater well is a criterion the effort is doomed to failure for the Thompson crater is still boiling and recently caught fire again, making night fishing easy on Half Moon Lake near by. Almost simultaneously with the crater, Southern Carbon Co.'s No. 1 Tegola in Section 4-15-6, on the southern edge of the field was successfully completed, gauging 46,000,000 feet of gas at 2,476 feet, one of the deepest wells in the field if not the deepest. It had tested dry a few days before at 2,458 feet—close to standard for Richland.

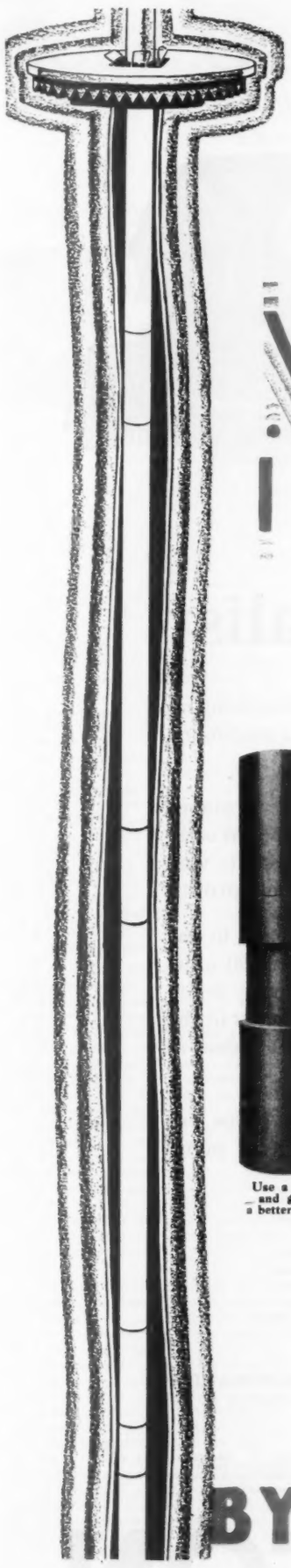
Dry Hole in Franklin

Franklin Parish' wildcat, Ruston Drilling Co.'s No. 1 West Virginia, Section 23-15-7, was a dry hole at 3,500 feet, contract depth. It had drilled into black sandy shale at 3,470 feet and through layers of what appeared to be volcanic ash and topped the red beds at 3,470 feet. George O. Baird's No. 1 Tremont in Section 24-16-1w, Jackson Parish, topped the lime, or gas rock as some choose to call it, at 2,628 feet, approximately 190 feet lower than The Texas Company found it in a well drilled some time ago a short distance north. The Texas Company's No. 1 Fuller, Section 9-21-2w, Union Parish, 35 miles or so north of Baird's well, cored red shale and streaks of salt water sand from 3,331-41 feet and is in lime at 3,352 feet.

The one other wildcat, or semiwildcat completion in the division during the week was Triangle Drilling Co.'s No. 1 Fullilove, Section 11-17-12, Sligo district of Bossier Parish, a 4,000,000-foot gas well at 1,713 feet total depth. Delaware-Louisiana Development Co. ran testing tool on No. 4 Bollinger in Section 38-23-11, a semiwildcat in the Cartersville district of Bossier Parish, and got 2,000,000 feet of gas with salt water from 6 feet of sand, total depth 3,914 feet. The well previously had been completed as a 40,000,000-foot 1,105-pound gasser at 3,052 feet.

Humble Oil & Refining Co. and R. W.

(Continued on Page 130)



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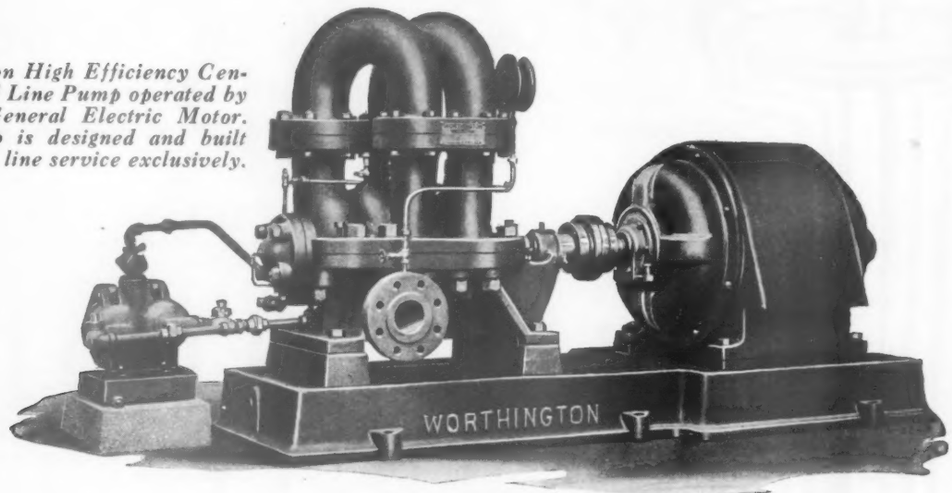

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WORTHINGTON

Good Gas Well Struck in Bruni Field

O. W. Killam Completion Produces 40,000,000 Feet Daily. Operators in This Webb County Area Expect To Find Oil Too

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., June 24.—Proven areas in southwest Texas the last week have been devoid of excitement. One of the most interesting spots at this time is around Bruni in Webb County, where O. W. Killam and Trussell, Cezeaux, Putnam, Inc., have been punching holes in the hope of finding oil production. This exploring of that area has been going on for more than a year. O. W. Killam's No. 10 Bruni in Survey 9 of the Adams subdivision of the Bruni lands in sand at 2,331-43 feet last week came in a 40,000,000-foot gas well, and Trussell, Cezeaux, Putman, Inc.'s No. 3 Bruni, located about a quarter of a mile south of Killam's gasser, is in sand at 2,354 feet and has a fishing job. There have been evidences that this area should produce oil and operators are still expecting it to. However, gas is in demand now that the Magnolia is building its line from the Mirando district to San Antonio.

Another feature of the Laredo district is the Muckelroy and others' No. 1 Trevino in Zapata County, reported two weeks ago as coming in gas and a week later with 300 feet of oil in the hole and going on the pump. It went on the pump late last week and is estimated at 20 bbls. of oil a day. The depth is 1,300 feet and the well is located in a proven district, but on unproven acreage 2 miles east of the Jennings gas field and 5 miles west of the Randado oil field. It probably opens a new oil-producing spot the size and extent of which is uncertain. Buck & Coursey are drilling a few miles south in the hope of picking up the same thing, but some believe the Muckelroy Pool will trend northeast and southwest.

Looks Better than Ever

Ever since the original Mirando Valley Pool was brought in by O. W. Killam in the northeast corner of Zapata County the acreage off to the southwest of it and between it and the old Jennings gas pool has looked good to some oil men and the Cuellar or Jennings oil pool brought in by Killam and now being developed and the Muckelroy No. 1 Trevino in Survey 412 a little south of it makes the area look still better. This activity is at the southwest end of the Mirando district. Most of the other activity that is interesting in the Laredo district is at the extreme northeast end where the Schoolfield-O'Byrne Pool is being developed. Five tests are bing drilled in the Schoolfield-O'Byrne Pool and several are near the sand and Magnolia has made a new location.

In the two producing spots on the Kohler ranch in Duval County, Humble Oil & Refining Co. and Reiter-Foster Oil Corp. have made some new locations that will extend the fields. The No. 29 Kohler in the southwest corner of Survey 395 will extend the gas spot a half mile southeast and the No. 30 in the northwest corner of Survey 169 is more than a mile northeast of the nearest production in the Simms Pool off to the south.

In the Carolina-Texas Pool in Webb County since the completion of two tests reported last week at around 3,000 feet, extending the oil producing sand a half mile, interest centers in the George S. Marshall No. 1 Webster in Survey 684. At 2,127-32 feet it tested a sand and found it dry. Operators in that field are not passing up anything owing to the fact that they have had some surprises. Marshall is expecting oil production at about 2,600 feet, being between wells producing at that depth and a quarter of a mile from each. There are only a few 2,600-foot wells in the pool thus far and some element of uncertainty about it yet with the bounds not marked.

Joe Bruner Pool

Interest in the Joe Bruner Pool in Caldwell County the last week has centered largely in the Forest Oil Co.'s No. 1 Lucy Moore, 1 mile south of the city of Luling and that far beyond production At 1,495 feet it gauged over 4,000,000 feet of gas and the gas company supplying Luling is dickering for the supply for its line. Edwards lime oil production is found at around 2,700 feet in the Luling Field. Along the east edge of that field there have been some gas wells at around 1,100 feet. Golden West Oil Co. drilled two in that part of the field near the discovery well and Tips De Armand drilled one up near the middle of the field. Geology of the field, however, is such that there is a question whether it will extend any farther north or south of the present limitations so far as Edwards lime is concerned. This is because the displacement along the fault line grows less at the extremes of the field. There is a possibility that some small Edwards lime producers may be found south of the city of Luling, as would seem to be indicated by this gas well. However, it is possible for conditions to exist that are not shown on the surface.

In the Luling Field several wells were completed the last week averaging 400 bbls. Humble Oil & Refining Co. has the biggest string of tests of any in the field and these to a large extent are on the acreage in which a half interest was purchased from the Luling Oil & Gas Co. Some have not been gauged, the crude being run to tanks and no separate gauge kept on the wells. Eighteen wells belonging to one operator in the field on a one-day gauge made 8,600 bbls in 24 hours, an average of 477 bbls. to the well. Most if not all were being pumped.

There were rumors late last week that an advance in the price of Joe Bruner crude was due in a few days by one of the purchasing companies and there was a movement on among the independent producers to start something that would get an advance, it being asserted that the gravity of the crude based on Mid-Continent prices should bring $1.47 instead of $1.25 as at present. The first dry hole drilled in the field in some time was drilled by the Humble Oil & Refining Co. It is the No. 1-B Floy Gray and it got too near the edge. At 2,833 feet the rig was moved off and the hole is dry. Casing was left in the hole, giving rise to the opinion that the company may drill it deeper to lower formations such as the Glenrose or Trinity. Nothing in the field has gone deeper than the top of the Edwards.

Auga Dulce

After some weeks of inactivity Agua Dulce gas field reports another completion. The R. & G. Corp.'s No. 2 Ed Allen at 1,986 feet on a drill stem test made a showing of gas and looks like a good well. Casing is being set and the well will be brought in in a few days. Some say this is the same as the sand at 2,016 in the discovery well. The well is about 1½ miles east of the discovery well and the field is now approximately 2 miles wide and 2 miles long.

Development of the little shallow Paul Dobrowolski Pool in Bexar County, which hung up for a time, is to start again. Richardson & Crouch have a test down 280 feet and will be finishing a test next week. Eckert and Dobrowolski will start drilling again soon on their acreage.

Ina Oil Field

Golden West Oil Co. is paying $1.50 a barrel for Ina Field crude oil and is said to be one of the few in America that are running to capacity and with its product sold ahead of capacity. Several of the old wells in the field have been cleaned out and put on production and additional tests started, the company now drilling on the No. 8 Wilson. Golden West Oil Co. bought a half interest in the W. R. Painter acreage with the No. 1 Muennink on it. This well was rigged up on the pump the middle of last week and the product is being hauled by truck to the refinery which is in the field till pipe line can be laid. Golden West has also bought the Ina Oil Co. 250-acre tract lying between its other wells and the Painter property on which tract are two wells that are being cleaned out. Pump units are being set up on both leases and additional tests will be started at once.

Ina Field was discovered a few years ago, but owing to the oil being heavy and with a problem of pumping difficult of solution, the field never developed. The crude could not be run through a pipe line without heating. Lately Golden West, after buying most of the acreage, built a 200-barrel refinery in the field and started experimenting with the crude which makes a lubricating oil of excellent quality. A contract was made with J. S. Cosden & Co. to deliver an amount of refined lubricating oil in excess of the capacity of the plant and the contracts previously on hand. A new 500-barrel still is being completed along with an additional 100-barrel finishing still and condensers. One of the railroads will run a spur track to the refinery. This and the solution of the problem of pumping the crude is starting a drilling campaign. Ina crude has a double base, both asphalt and paraffin being found in it and the paraffin stops up the screens. Hot steam readily cleans it out and keeps the wells on steady production. There are about 15 wells in the field which have stood for more than a year without being pumped till recently. In addition to these it will be necessary to drill more to meet the demands of the refinery.

Daily average production of the Southwest Texas pools for the week ending June 22 follows:

SOUTHWEST TEXAS PRODUCTION

	Bbls.
Dale	495
Branyon	10
Bruner	51,430
Gonzales	84
Kingsville	266
Larremore	150
Luling	11,508
Lytton Springs	1,021
McMullen County	77
Medina County	30
Mirando District	11,084
Somerset	1,928
Yoast	1,191
Total	79,274
Total previous week	76,874
Increase	2,400

COMPLETIONS
Caldwell County

The Texas Company's No. 9 Merriwether, A .Floyd Survey, 300 feet northeast of No. 7, was completed at 2,716 feet making 60 bbls.

(Continued on Page 150)

SERPENTINE GETS FIRST GOOD OIL SHOWING IN SAN ANTONIO SECTION

By B. D. Stevenson

SAN ANTONIO, Tex., June 24.—Pearson Oil Co.'s No. 1 Irrigated farms land in Medina County at 1,050 feet had gone 115 feet into Serpentine the middle of last week and had a lot of heavy oil on the ditch and with enough gas to keep the well agitated continually. Deepened to 1,071 feet it blew in a gas well and has been completed and turned into the Southern Gas Utilities Co.'s line which passes within 500 feet of it. The pressure gauge was too small to measure the well, being limited to 500 pounds, and the well made that. How much above that it would go no one knows. It is about a 3,000,000-foot gas well and the oil showing was the first important oil showing that has ever been found in the Serpentine in Medina County and it is the first gas well in that formation in the San Antonio territory. The well is in the Isaac Palmer Survey and about 1 mile southeast of Noonan.

A showing of oil reported previously in the Zigzag Oil Co.'s No. 1 Irrigated farms located about 2 miles northwest of Devine proved a false alarm. There was only a little of the sand and the test last week topped the Austin chalk at 2,121 feet which is most too low and the hole looks discouraging though there will probably be another test drilled in that part of the country. It is a few miles south of the Pearson gas well.

Zapata Wildcat Gasser

John Poppas' No. 1 Cuellar in Zapata County near the town of Zapata on the Rio Grande is a small gas well at 1,408 feet with a pretty good rock pressure but small volume. The well is important, however, for it is due north of Guerrero in Old Mexico, the distance between them being but a few miles and there is claimed to be a big structure from Guerrero south to Linares. The Humble Oil & Refining Co. has a big block around Guerrero and is about to begin drilling. Two dry holes were drilled near Linares a few years ago. The John Poppas well is 20 miles from any production in the Mirando Field, and the probability of its making some kind of a gas well was reported last week in The Oil and Gas Journal.

H. Muckelroy, Jr.'s No. 1 Trevino, reported a couple of weeks ago as showing gas and then later found to be standing with 300 feet of oil in the hole, last week was put on the pump. It is a 20-bbl. oil well. Buck & Coursey's No. 1 Garzain found sand at 928-32 feet and is reported with a showing of gas and drilling deeper. The Muckelroy well is in Survey 412 of Zapata County and the Buck & Coursey test is in Block 47 of the Comitas Grant and about 4 miles nearly due south of the Muckelroy well. The showing of gas is very interesting but there seems to be an opinion that if it makes a producer it will open something new rather than be in the same pool with the Muckelroy test.

Southeast Jim Hogg

Deep Rock Oil Co. is rigging up for a test in the southeast corner of Jim Hogg County, its No. 1 Kelsey being a quarter of a mile from the north and east lines of Block 20 of the subdivision of the A. M. Kelsey lands in the San Rafael grant. This is a little west of the location but right in the same general area where W. G. French and Amos Dinn are drilling. The French tests are in the southwest corner

(Continued on Page 126)

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Gulf Coast Deep Hole Record Broken

Yount Lee Oil Co.'s No. 1 Crowley on Jennings Dome Drilling Below 7,400 Feet, Passing Mark Recently Set by Same Company

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., June 24.—Another record for deep holes on the Gulf Coast was broken Saturday when Yount Lee Oil Co. drilled its No. 4 Crowley on the north side of the Jennings Dome, Louisiana, to below 7,400 feet, surpassing the mark set earlier in the month when the same company's No. 6 Housierre-Latrielle was completed at a total depth of 7,388 feet, as good for an estimated 5,000 bbls. daily although it has been pinched in to approximately 2,500 bbls. since then.

The No. 4 Crowley, which is on the opposite side from the deep producer, has passed through 46 feet of sticky shale and is showing oil and gas. This well is approximately 1,800 feet to the northeast of the shallower producing area of the dome, and if it is a producer, opening a second such deep field, a new light will be thrown on coastal dome operations which probably will cause operators to start drilling farther from domes than previously had been thought worth while.

Other deep tests figured prominently among coastal developments. The early part of the week Gulf Production Co.'s No. 7 Bordages at Fannette, Jefferson County, from a sand at 5,660 feet, came in flowing an estimated 1,000 bbls. daily. This hole was drilled to a total depth below 5,800 feet, but screen was set at the shallower depth.

Fannette a Major Field

This was the second completion in that field within a week, the other being No. 11 Thomas, brought in at 5,665 feet for 800 bbls. daily. These two completions definitely established Fannette as a major field, as the field has had only one other producer, No. 2 Burrell, which has flowed for sufficient length of time to be considered a commercial well.

At Barbers Hill, Yount Lee Oil Co. brought in another deep producer on the southwest side of the dome in its No. 6 Chambers, which was estimated good for 1,500 bbls. daily at 4,985 feet. Three other deep tests at Barbers Hill, including the two deep producing areas on the east and on the southwest, are in the pay sand and should be tested the coming week.

Interest again was centered on the new dome field at Point Barre, St. Landry Parish, at the close of the week when The Texas Company's No. 2 Botney Bay resumed flowing, making an estimated 400 bbls. daily. This well came in over a week ago and for a short time flowed at the estimated rate of 100 bbls. an hour with about 6,000,000 feet of gas.. The pressure died, however, and the well quit flowing and a string of tubing was run. This is in a sand at a total depth of 3,618 feet.

While this well was coming back in, Gulf Refining Co.'s wildcat, No. 1 Gaudet, ½ mile distant and the third test drilled at Point Barre, tested salt water in a sand at 3,799-3,828 feet, some 200 feet lower than in The Texas Company's well. The hole will be deepened.

Texas Well Makes Good Showing

The Texas Company's wildcat producer in the southwest part of Orange County, the No. 1 Kuhn, which came in two months ago for 1,900 bbls. daily of pipe line oil, also made a good showing. This well had dropped off until it was making a small amount of oil with a large quantity of water, but after being shut in for a week during a period of high water it started off again at better than 600 bbls. of oil daily and has been holding up at slightly less than that since then.

Locations for two more tests in the vicinity of the Kuhn well have been made, the first since the completion of the well, and canals are being dredged to them and foundations for derricks put down. These will be No. 1 Starks and No. 1 Polk.

Humble Oil & Refining Co. added two more good producers at DeWalt, Fort Bend County, in its Nos. 2 and 4 Hamner fee, each of which flowed initially on chokes at the rate of 1,000 bbls. daily. The former is in sandy shale at 3,669 feet and the latter at 3,555 feet.

Other completions were of little importance. Humble Oil & Refining Co. and Valley Oil Corp.'s No. 1 Helmuth, Raccoon Bend, was completed initially at 500 bbls. daily from sand at 3,854 feet. At Spindletop, Yount Lee Oil Co.'s No. 92 Gladys City came in flowing at the rate of 450 bbls. of oil at 3,176 feet. Wilson-Braoch's No. 3 Wilson, Edgerly, an old well deepened to 3,038 feet, was put on the pump for 100 bbls. of fluid, 15 per cent b. s. and water. Moody Corp.'s No. 6 West-Schenck, Blue Ridge, which was put on the pump at 3,940-88 feet, is making only 4 per cent net oil out of 500 bbls. of fluid daily, and Acorn Oil Co.'s No. 70 Paraffine, Batson, is pumping 50 bbls. net oil at 1,137 feet.

Humble To Deepen Well

On the South of Humble, where one of the most deep plays on the coast has been going on, Humble Oil & Refining Co.'s No. 1 Williams failed to make a well at 4,888 feet and now tubing is being pulled to deepen. This test was somewhat of a disappointment to operators who had expected a good well considering the s..owings which had been encountered. The well had shown greater gas pressure than producers in the main part of the deep sand play, approximately 2,000 feet to the east.

The Texas Company's No. 21 Wheeler & Pickins, a north offset to South Texas Petroleum Co.'s No. 4 Morris, a good producer on the south side of Humble, also did not come up to expectations. It was bailed in late Friday but blew only dry gas and was shut in waiting orders. It, however, is shallower than the other wells, being 4,298 feet, but is closer in to the dome.

Daily average production of coastal fields was fairly steady during the week with a gain of only 1,597 bbls. in the daily average. The new production added was in controlled fields and was held in to the minimum which probably prevented a substantial gain being indicated. Daily averages by fields for the week ending June 22 were:

TEXAS

	Bbls.
Allen	8
Barbers Hill	8,500
Batson	1,475
Big Creek	4,719
Blue Ridge	5,049
Brenham	200
Boling	1,639
Clay Creek	2,637
Damon Mound	653
DeWalt	11,450
Fannette	698
Goose Creek	5,780
Hankamer	50
High Island	1,193
Hull	8,849
Humble	5,237
Jasper	10
Markham	330
Nash	475
North Dayton	405
Orange	2,900
Orchard	148
Pierce Junction	18,944
Port Neches	611
Refugio	2,717
Raccoon Bend	6,248
Saratoga	932
Sour Lake	2,729
So. Liberty-So. Dayton	5,656
Spindletop	27,133
West Columbia	6,137
Total	133,512
Total previous week	130,234
Increase	3,278

SOUTH LOUISIANA

Anse La Butte	50
Bayou Bouillon	194
Black Bayou	157
Edgerly	767
Jennings	3,310
Hackberry	4,418
Lockport	3,931
Sorrento	245
Starks	400
Sulphur	2,175
Sweet Lake	500
Vinton	4,415
Welsh	30
Total	20,593
Total previous week	22,184
Decrease	1,591
Total Gulf Coast	154,105
Total previous week	152,418
Increase	1,687

GULF COAST FIELDS AND WILDCATS

Week Ended June 22

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 1 Smith, east flank... Drlg. sand 5,408 ft.
Mills Bennett Production Co.'s No. 3 Smith..... Drlg. lime rock 2,152 ft.
Mills Bennett Production Co.'s No. 2 Hamman ..... Drlg. gumbo 1,757 ft.
Mills Bennett Production Co.'s No. 1 Barber, north flank.. Aband. cap rock 6,262 ft.
Humphreys Corp.'s No. 8-A Kirby, east flank ..... Drlg. sand and shale 3,320 ft.
Humphreys Corp.'s No. 1-H Kirby, east flank ..... Drlg. sand and lime 4,171 ft.
Humphreys Corp.'s No. 1 Tarbutton, east flank ..... Fishing 4,350 ft.
Humphreys Corp.'s No. 1 Illfrey, east flank ..... Drlg. rock 2,183 ft.
Moody Corp.'s No. 1 Illfrey ..... Rig.
Republic Production Co.'s No. 1 Kirby, south flank ..... Drlg. shale and lime 4,198 ft.
Rexal Oil Co.'s No. 2 McLean, east flank ..... Set casing 4,007 ft.
Rexal Oil Co.'s No. 1 Smith, east flank ..... Drlg. sand and lime 3,523 ft.
Sun Oil Co.'s No. 2 Chambers, southwest ..... Drlg. sand and shale 5,489 ft.; showing oil.
Sun Oil Co.'s No. 1 Chambers, southwest ..... Flowing by heads 5,708 ft.
Talbert & Markle's No. 1 Schilling..... Drlg. sand showing oil 5,109 ft.
Yount Lee Oil Co.'s No. 4 Chambers, southwest ..... Drlg. hard sand 6,446 ft.
Yount Lee Oil Co.'s No. 6 Chambers, southwest ..... Flowing 1,500 bbls. half-inch choke 4,965 ft.

BOLING—FORT BEND AND WHARTON

South Texas Pet. Co.'s No. 6 Bay, northeast ..... Drlg. heaving shale 2,945 ft.
Sun Oil Co.'s No. 6 E. C. Farmer, east ..... Drlg. hard sand 3,663 ft.
Sun Oil Co.'s No. 7 E. C. Farmer, east ..... Drlg. gumbo and lime 1,303 ft.
The Texas Company's No. 1 Bushnell, northeast ..... Sticky shale 4,172 ft.; shut down high water.
The Texas Company's No. 2 Pleasants, northwest..... Rig up.
Union Sulphur Co.'s No. 2 Hill ..... Aband. in salt 1,838 ft.
Vacuum Oil Co.'s No. 3 Taylor, south side ..... Drlg. gumbo 653 ft.

RACCOON BEND—AUSTIN COUNTY

Humble Oil & Refg. Co.-Valley Oil Corp.'s No. 4 Hardy.. Reaming 3,233 ft.
Humble & Valley's No. 3 Saunders ..... Drlg. sandy shale 2,978 ft.
Humble & Valley's No. 1 Buchanan ..... Washing 3,570 ft.
Humble & Valley's No. 2 Buchanan ..... Location.
Humble & Valley's No. 2-A Bracey ..... Drlg. sandy shale 3,368 ft.
Humble & Valley's No. 1 Helmuth ..... Comp. flowing 500 bbls. 3,854 ft.
Humble & Valley's No. 1-A Mitchell ..... Drlg. sandy shale and lime 3,291 ft.
Humble & Valley's No. 1-B Mitchell ..... Drlg. sandy shale and lime 1,903 ft.
Humble & Valley's No. 2 Stravoski ..... Drlg. shale 2,460 ft.
Humble & Valley's No. 1 Koehn ..... Aband 1,134 ft.
Humble & Valley's No. 1-B Koehn ..... Rig.
Humble & Valley's No. 3 Walton ..... Rig.
Humble & Valley's No. 4 Walton ..... Location.
Humble & Valley's No. 4 Thompson ..... Drlg. hard sand 1,066 ft.
Humble & Valley's No. 3 Dietrichs ..... Drlg. sticky shale 1,066 ft.
Humble & Valley's No. 4 Dietrichs ..... Location.
Humble & Valley's No. 1 Jackson ..... Drlg. hard sand 980 ft.
Humble & Valley's No. 1 Mahnki ..... Drlg. shale and lime 656 ft
Humble & Valley's No. 3 Reece ..... Rig.
Humble & Valley's No. 4 Austin College ..... Derrick.
Humble & Valley's No. 1 Graneau ..... Location.
Humble & Valley's No. 2 Bellville School ..... Derrick.
Humble & Valley's No. 2 Woodley ..... Location.
Humble & Valley's No. 2 Mueller ..... Rig.
Humble & Valley's No. 2-B Grawunder ..... Derrick.
Humble & Valley's No. 3 Reese ..... Rig.
Humble & Valley's No. 4 Gotosky ..... Location.

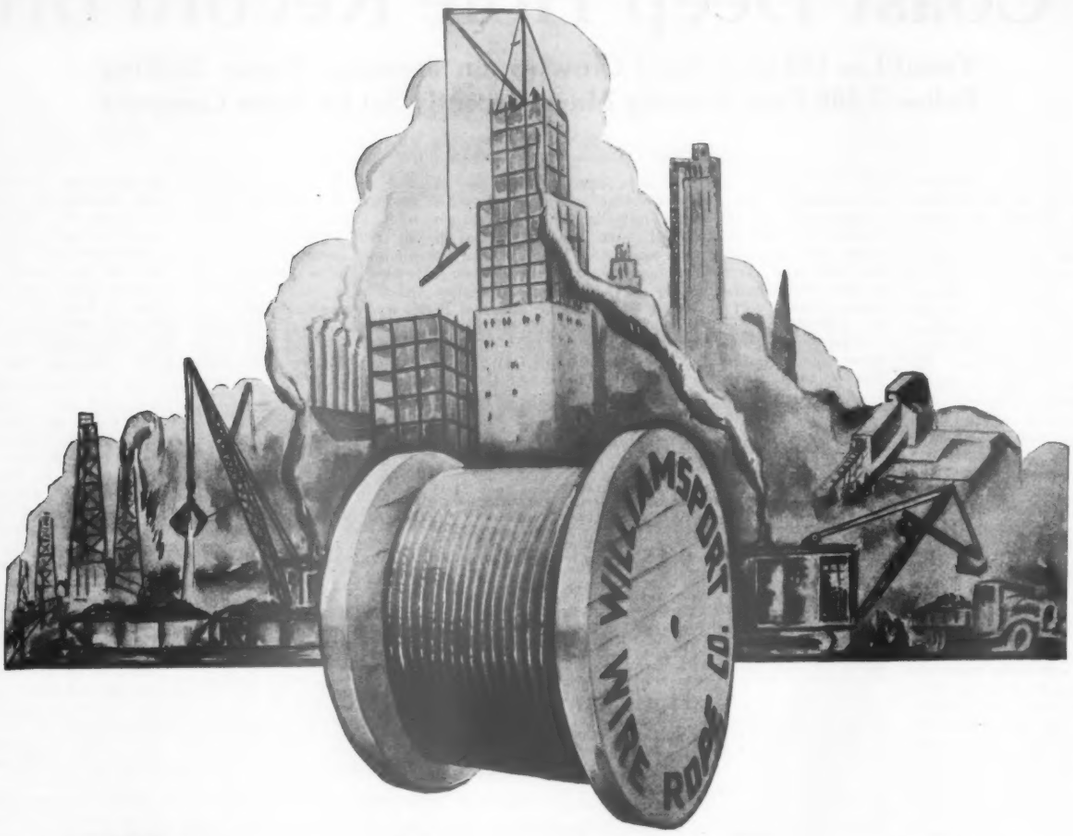
DE WALT—FORT BEND COUNTY

Humble Oil & Refg. Co.'s No. 8 Sugarland ..... Drlg. hard sand 2,509 ft.
Humble Oil & Refining Co.'s No. 3 Nelson ..... Drlg. sandy shale 3,142 ft.
Humble Oil & Refining Co.'s No. 4 Nelson ..... Drlg. sandy shale 3,298 ft.
Humble Oil & Refg.'s No. 4 Camp ..... Drlg. sandy shale 3,327 ft.
Humble Oil & Refg.'s No. 6 Brazos ..... Reaming 3,429 ft.
Humble Oil & Refg. Co.'s No. 7 Brazos ..... Derrick.
Humble Oil & Refg.'s No. 1-B Deatherage ..... Drlg. hard sand and lime 3,095 ft.
Humble Oil & Refining Co.'s No. 1 Hamner fee ..... Sandy shale showing oil; set casing 3,441 ft.
Humble Oil & Refg.'s No. 2 Hamner fee ..... Comp. flowing 1,000 bbls. 3,669 ft.
Humble Oil & Refg.'s No. 3 Hamner fee ..... Location.
Humble Oil & Refg.'s Co.'s No. 4 Hamner fee ..... Comp. flowing 1,000 bbls. 3,552 ft.
Humble Oil & Refg. Co.'s No. 2 Dew Bros. ..... Derrick.
Humble Oil & Refining Co.'s No. 5 Hamner fee ..... Derrick.

HUMBLE—HARRIS COUNTY

Humble Oil & Refg. Co.'s No. 1 Williams, south side deep test ..... Tested salt water 4,888 ft.; pulling tubing.
Marland Oil Co.'s No. 1 Cezwaux, south side ..... Drlg. sticky shale 4,275 ft.
Harvey Smith et al's No. 1 Rosenthall, north side ..... Drlg. gumbo 1,229 ft.
So. Texas Pet. Co.'s No. 5 Morris, south side ..... Set 9⅝-in. casing 4,528 ft.
So. Texas Pet. Co.'s No. 6 Morris, south side ..... Set 9⅝-in. casing 4,070 ft.
South Texas Petroleum Co.'s No. 7 Morris ..... Rig.
So. Texas Pet. Co.'s No. 1 Burt, south side ..... Drlg. sticky shale 5,669 ft.
Sun Oil Co.'s No. 47 River, north side ..... Coring 4,412 ft.
The Texas Company's No. 40 Stevenson ..... Rig.
The Texas Company's No. 262 Landslide, south ..... Drlg. shale 5,238 ft.
The Texas Company's No. 263 Landslide, south ..... Drlg. shale 4,613 ft.
The Texas Company's No. 264 Landslide, south ..... Drlg. shale, sand and boulders 4,068 ft.
The Texas Company's No. 265 Landslide, south ..... Derrick.
The Texas Company's No. 21 Wheeler & Pickens, south.. Bailing 4,298 ft.
The Texas Company's No. 266 Landslide ..... Derrick.
The Texas Company's No. 29 C.O.&G. ..... Derrick.
The Texas Company's No. 35 Koehler ..... Rig.

(Continued on Page 113)



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Santa Fe Springs Output Takes Jump

Increase Caused by New Wells and by Opening Up of Others Following Failure of Independents to Join Conservation Program

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 24.—Daily production at Santa Fe Springs showed another substantial increase in the last week resulting from the completion of nine new wells which showed an aggregate initial daily output of 44,447 bbls., and the opening up of curtailed production by major companies which have been objecting to the failure of independent operators to pinch back production in conformity with the statewide conservation program inaugurated April 22.

The General Petroleum, which is running 60 strings of tools in this field, successfully finished three new wells and one recompletion the last week. The largest of the three new wells was No. 233 Santa Fe, which came in under a natural flow doing 6,875 bbls. of clean 31.1 gravity oil daily from the O'Connell zone at 6,550 feet, the hole having been plugged back from 6,608 feet. No. 221 Santa Fe also showed substantial production upon completion in the O'Connell zone at 6,678 feet as this well tanked 6,480 bbls. of unusually clean 32.5 gravity oil during the initial 24-hour test. No. 168-D, which the General Petroleum finished last week, came in flowing 5,160 bbls. of exceptionally clean 33.1 gravity oil daily from the upper part of the O'Connell zone at 6,593 feet. The recompletion was No. 207 Santa Fe, which was finished in the O'Connell zone doing 2,095 bbls. daily from 6,516 feet. The General Petroleum has other potential producers nearing completion at Santa Fe Springs.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	492,395	2,201,572
Fuel oil	.....	.....	.....	.....	49,950	111,621
Diesel and gas oil	.....	.....	.....	.....	913,200	1,009,077
Gasoline	754,872	107,839	390,590	55,799	9,846,218	5,833,893
Naphtha distillate	.....	.....	.....	.....	81,750	76,500
Coastwise—						
Crude oil	386,711	55,244	76,244	10,892	11,043,412	10,744,565
Fuel oil	350,426	50,061	537,283	76,755	10,533,478	8,308,605
Diesel and gas oil	22,550	3,221	7,374	1,053	690,087	673,123
Gasoline	146,854	20,979	323,945	46,278	5,122,059	3,169,687
Kerosene	3,588	513	.....	.....	34,044	26,435
Naphtha distillate	.....	.....	.....	.....	.....	171,566
Exports—						
Crude oil	216,592	30,942	32,809	4,687	2,487,031	1,193,310
Fuel oil	485,071	69,296	467,343	66,763	8,955,226	11,833,624
Diesel and gas oil	47,265	6,752	43,344	6,192	1,416,985	1,402,523
Gasoline	159,658	22,808	412,931	58,990	5,089,125	2,731,405
Kerosene	.....	.....	102,617	14,660	1,400,255	2,160,817

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	342,425
Gasoline	.....	.....	.....	.....	1,050,732	1,204,377
Lubricants	.....	.....	.....	.....	.....	208,024
Coastwise—						
Fuel oil	.....	.....	62,112	8,873	1,233,221	2,177,789
Diesel and gas oil	.....	.....	3,970	567	289,770	161,051
Gasoline	68,087	9,727	125,129	17,876	2,221,481	2,068,697
Kerosene	.....	.....	2,970	424	53,460	97,456
Exports—						
Crude oil	.....	.....	.....	.....	121,603	79,199
Fuel oil	.....	.....	14,368	2,053	256,039	1,334,217
Diesel and gas oil	.....	.....	30,636	4,377	155,474	10,400
Gasoline	170,009	24,287	204,361	29,194	2,937,649	2,275,352
Kerosene	91,554	13,079	.....	.....	382,417	307,089
Lubricants	.....	.....	.....	.....	21,899	11,400

Texas Adds Three Producers

The Texas Company, which supplanted the General Petroleum as the largest single producer in the Santa Fe Springs Field several weeks ago, added three more wells to its list of producers in the last week and expects to have three more on production within the next few days. The company startd off by finishing No. 4 Wickman in the upper part of the O'Connell zone at 6,257 feet and this project, which was finished with a 4¾-inch combination string, showed an initial of 7,705 bbls. of 32.7 gravity oil and 4,100,000 feet of wet gas daily. The Texas Company followed up this completion by bringing in No. 3 Standlee and No. 5 Steinly, the former in the Nordstrum zone at 5,027 feet and the latter in the O'Connell horizon at 6,476 feet. No. 3 Standlee tanked 686 bbls. of 32.1 gravity oil during the first 24 hours. No. 5 Stenly made 2,088 bbls. and 2,250,000 feet of wet gas daily. The Texas Company, in addition to heading the production list in the O'Connell horizon, apparently also expects to lead the way in Clarke zone development as it has three wells in the oil sand. These are No. 2 Lamb in pay at 7,375 feet. No. 10-A Patterson at 7,578 feet and No. 6 Steinly at 7,360 feet. The General Petroleum, George F. Getty, Standard Oil Co. and Wilshire will also make a bid for production in the deep Clarke zone in the near future.

Bandini Gets Biggest Well

The largest well put on production at Santa Fe Springs in the last week was the Bandini Petroleum Co.'s No. 10 Off, which blew in under a natural flow doing 10,225 bbls. and 10,100,000 feet of wet gas daily from the O'Connell zone at 6,774 feet. This new well, which is located on an 18-acre lease east of the four corners and just south of The Texas Company's prolific Wickman lease, is one of several which the Bandini Petroleum, a subsidiary of the Wilshire Oil Co., should have on production in the near future. The Ambassador Petroleum, another Wilshire Oil Co., subsidiary, has two wells on the Baker lease, Nos. 12 and 13, nearing production. The Union Oil Co., which is running 28 strings of tools in this field, should complete several new wells within the next few weeks as nine potential producers are being prepared for immediate production.

Union finished No. 10 Alexander doing 3,618 bbls. of clean 33.1 gravity oil per day from an even 6,800 feet. This well was originally scheduled for completion several weeks ago but pipe trouble developed at the last minute. The frozen pipe could not be circulated loose and the company found it necessary to complete this well with a string of 3-inch landed at 6,300 feet. In addition to the Union, the Wilshire, George F. Getty and Shell Oil Co. should also chalk up new wells shortly.

The Standard Oil Co., which has experienced a discouraging development campaign at Santa Fe Springs as far as deep-zone development is concerned, successfully recompleted No. 14 Walker, a former upper-zone producer which was redrilled and deepened to the O'Connell zone at 6,470 feet. This rejuvenated well, which was returned to production flowing 1,610 bbls. of clean 33.1 gravity oil and 4,000,000 feet of wet gas daily, increased the Standard's deep-zone production to approximately 3,500 bbls. daily from three wells. It is probable, however, that the company will chalk up additional completions in the near future as it has seven wells rotating ahead in the pay.

Western Part of Field Disappoints

The Standard's relatively small deep-zone production at Santa Fe Springs is due to the fact that its initial development work was concentrated in the western part of the field, which originally looked promising. Subsequent development work, however, changed the picture, as practically every large producer finished, with the exception of those on the apex of the structure, is located in the eastern section of the field. When the scene shifted the Standard immediately shut down 10 wells in the western and southern parts of the field, practically all of which were below 4,500 feet.

Santa Fe Springs was visited by another gas blowout last week when the General Petroleum's No. 137-D Santa Fe got beyond control while rotating ahead at 3,757 feet and began blowing off at the rate of approximately 5,000,000 feet of gas daily. It sanded up a few days after blowing in, however, and did not result in any great damage. This new well, which is several blocks away from York & Lockhart's No. 2 McKeon, which was burning, did not take fire, probably owing to the fact that it is spouting mud and water along with the gas production.

The only pipe landed in No. 137-D is a string of 10-inch set at 1,015 feet and it is evident that the dry gas zone located at approximately 2,000 feet is responsible for its blowing out. This gas zone proved a source of trouble shortly after the Santa Fe Springs Field was discovered and resulted in the loss of several holes, some of which burned for a long time. These gas blowouts, together with the fact that the General Petroleum developed the gas zone for commercial gas production, has greatly lessened its rock pressure and practically eliminated it as a source of trouble. This undoubtedly has resulted in some laxity, although in the case of No. 137-D ordinary precautions had been taken.

No. 1 McAdams Under Control

L. J. Rhode's No. 1 McAdams, which blew in out of control June 10, and immediately took fire, was brought under control several days ago and is producing 3,500 bbls. of 32.9 gravity oil and approximately 6,000,000 feet of wet gas daily. This well caused the loss of several adjacent derricks and rotary drilling equipment and set fire to York & Lockhart's No. 2 McKeon. These two wells are only a few hundred feet apart, and although No. 2 McKeon was still burning at last reports, Rhode's No. 1 McAdams has been capped and returned to production. A stream of water is being constantly played on the Christmas tree of No. 1 McAdams and another on the gas trap, which is located within 25 feet of the control fittings.

Engineers, commissioned for the purpose of bringing No. 2 McKeown under control, started tunneling a few days ago and while progress has been rather slow the casing in this project should be encountered in the next week or 10 days. Several wind machines were obtained from Hollywood motion picture studios and while their utilization facilitated control work on No. 1 McAdams they were not of any special assistance in the initial attempt to cap No. 2 McKeon.

Seal Beach

Only a limited amount of development work has been undertaken in the Seal Beach Field of Los Angeles Basin during the last several months but notwithstanding this restriction excellent completions have been chalked up. Three more wells were put on production in the last week, two of which were recompletions after

COMMERCIAL WELL IN NEWAGO; EIGHT PRODUCERS IN MUSKEGON

By Special Correspondent

MUSKEGON, Mich., June 22.—Commercial production was developed in a western Michigan wildcat well in Newaygo County and eight new producers in the Muskegon Field had an aggregate initial production of 7,250 bbls. last week with only one dry hole to mar an otherwise 100 per cent successful week.

Charles W. Marsh and others' No. 4 Ira R. Hallock, NW NW, Section 7-10-16, Muskegon Township, made 80 bbls. an hour initial and was estimated good for at least 1,500 bbls. a day at 2,018-22 feet. No. 3 Hallock on the same lease made only 40 bbls. an hour, an estimated initial production of 800 bbls. a day at 2,032-40 feet.

Globe Oil Co. completed one of the largest of the new Dundee producers in No. 2 Andrew Luinstra, NW NE, Section 7-10-16, when it made 60 bbls. an hour initial, estimated 1,200 bbls. a day. Pay sands were encountered from 2,023-25 feet.

Muskegon Oil Corp.'s No. 4 Stanley Daniloff, SW SW, Section 5-10-16, made 45 bbls. an hour and was estimated good for 900 bbls. daily at 2,041-49 feet.

The smallest well completed in the Dundee was by John R. Cox and others, of Grand Rapids, on the No. 1 James Dow, SW SE, Section 5-10-16, on the northwest side of M-20 near the area of Muskegon Township where many wells were drowned out or flooded with salt water last fall. It made slightly more than 200 bbls. at 2,066-67 feet.

The largest new producer in Laketon Township where two Dundee wells and one upper Traverse producer were brought in, was the Johnson Oil Refining Co.'s No. 3 A. Grotefeld, NE NE, Section 12-10-17, which came in at 2,032-38 feet making 51 bbls. an hour, or 1,200 bbls. initial.

The surprise of Laketon Township, however, was the 1,000-bbl. upper Traverse well brought in by Maire-Caswell-Kidder, trustees, on their No. 3 Shuler estate, NW NE Section 12-10-17. Pay sands were struck at 1,688 feet and the well flowed at the rate of 51 bbls. an hour at 1,694 feet. It is northwest of other upper Traverse producers which have been very freakish in location and production in this part of the field.

Dixie Oil Co.'s No. 4-D Kate McLaughlin, SW SW, Section 12-10-17, made between 400 and 500 bbls. initial in the Dundee at 2,035-60 feet.

The dry hole was the Bear Lake Oil Co.'s No. 1 H. Jacobson estate, NW SE, Section 14-10-17, a mile southwest of pro-

(Continued on Page 132)

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being redrilled and deepened from the upper to the lower horizon. These were No. 4 Bixby of the Marland, which was returned to production flowing 2,360 bbls. of clean 28.1 gravity oil daily and No. 3 Hellman of the Associated, which was recompleted doing 730 bbls. of clean 27.5 gravity oil daily. The former was redrilled and deepened to 5,692 feet while the latter was bottomed at 5,400 feet and finished with a 5-inch liner carrying 185 feet of perforated.

The Marland, discoverer of the Seal Beach Field, has two wells in the oil sand at the present time and has just finished driving piles for two new wells, both of which will be spudded in shortly. The Standard's No. 20 San Gabriel, which was put on production in this field last week registered an initial daily production of 1,190 bbls. of clean 26.9 gravity oil from 5,576 feet.

Santa Barbara

The last week saw the erection of additional rigs and the spudding in of several more wells in the recently discovered Santa Barbara Field, which was opened up by the Olympic Oil & Refining Co. last month. Exceptionally fast footage is being made in practically all of the wells drilling ahead in this area and with several projects either already below the 2,000-foot level or nearing that point this field will become the cynosure of operators in the next few weeks. The discovery well, completed at the relatively shallow depth of 2,428 feet, is standing shut in pending further developments.

The Ring Petroleum Co.'s No. 1 Nugent proved somewhat of a disappointment on a recent preliminary test as it showed water in the Vaqueros where production had been expected. This project, which is located approximately 750 feet south of the discovery, picked up the top of the Vaqueros approximately 150 feet higher than this formation was encountered in the discovery well and, while a thin oil sand was logged at 2,325 feet, it failed to yield commercial production. This well still has a chance of getting production by deeper drilling, but the failure to encounter the Olympic sand will probably slow up development work in the immediate locality. The most interesting feature in connection with the status of this well is the fact that it confirms early predictions that the Santa Barbara structure would be unusually narrow.

The next well scheduled to make a bid for production in the Santa Barbara Field is Robert Bowles' No. 5 Coastline, making hole at 2,201 feet. The oil sand should be picked up within the next few days if it underlies this property.

Dunlap & Knapp's No. 1 Hamilton should also be in a position soon to determine the potentiality of the Lomas sand, as this project is rotating ahead in the brown shale at 1,970 feet. The General Petroleum, which took over the entire holdings of the Olympic Oil & Refining Co. in this area on a 50-50 basis, has started an extensive development program involving 13 wells, three of which already have been spudded in. The Union Oil Co. is working on three projects, two of which are under way, with the third rigging up. The Major Oil Co., drilling on Lot 13 in Block J, was down 1,980 feet and this well should reach the depth at which production is expected before the expiration of another week.

Elwood

Two new wells are scheduled for early completion in the prolific Elwood Field of Santa Barbara County, one of which, the Barnsdall's No. 7 Bell Luton, should be tanking oil within the next day or two. It is being prepared for a production test. This potential producer, which was cemented at 3,246 feet, picked up the top of the oil sand at 3,244 feet and subsequently was drilled approximately 200 feet into the pay.

No. 5 Doty, scheduled to follow No. 7 Bell Luton into production, will probably be finished early in July as it is rotating ahead in a sticky shale at 2,870 feet. Daily production of this field approximated 26,250 bbls. in the last week. This is a daily average well production of 2,625 bbls. The largest producer in this field is the Barnsdall and Rio Grande's No. 6 Bell Luton which is making 4,250 bbls. daily. The output of this project is of special importance as it is located along the ocean front where tideland development is already getting well under way.

The prolific daily production of this producer, which was bottomed at 3,481 feet, strengthens the opinion of operators that tideland development offsetting present producing acreage at Elwood will prove unusually productive. Many are inclined to believe that new wells drilled out beyond mean high tide in the open ocean will be more productive than those located inside the shore line. If this theory is ultimately proven to be correct, production of the Barnsdall and Rio Grande will show a substantial increase within the next several months, as the axis of this structure bisects the tideland permit held by these two companies.

The Barnsdall and Rio Grande have already started preparations to develop the tideland drilling permit which fronts on the productive Bell Luton lease. Three piers or wharves will be immediately built out into the ocean for a distance of 200 feet in order to facilitate drilling operations. The Bankline, Honolulu Consolidated, Union Oil Co. and Pacific Western Oil Co. are also making preparations to engage in tideland development in the near future.

Kettleman Hills

Development work in the Kettleman Hills Field of Kings County is progressing faster than had been expected and several wells may be finished within the next 60 days if drilling continues uninterrupted. The curtailment program affecting this field is still in status quo, although a general ratification of the projected conservation movement is expected to be announced in the near future. Practically every operator in the north dome has endorsed the proposal to restrict production and development work until conditions improve but several are reluctant to suspend drilling operations for fear of jeopardizing the future status of acreage held under Federal prospecting permits. These operators are not expected to carry out the original proposal of suspending drilling operations just above the pay but are quite willing, however, to drill into the oil sand and suspend work immediately upon developing production. It was the original intention to stop just over the sand in consideration of which the Federal government would validate existing permits and this procedure may eventually be carried out if operators can be guaranteed protection.

The attitude of some operators on this situation was recently expressed by Irving V. Augur, president of the Bolsa Chica Oil Co. in a communicaton to stockholders of that company. One of the most significant parts of his letter called attention to the fact that "While the efforts of the oil industry and the Federal authorities to conserve oil by limiting production are wise and have the hearty co-operation of the Bolsa Chica Oil Corp., it is doubtful if this policy can be applied to the Kettleman Hills Field as a whole until such time as permittees have drilled discovery wells where time for making such discoveries is more or less limited. The law requires certain drilling to be done to protect rights acquired under permits and it will be the policy of the Bolsa Chica Oil Corp. in company with other operators on the structure to proceed with whatever drilling is necessary to make a discovery and thereby establish rights to a government lease." It is obvious from the foregoing that wells will be definitely drilled into the pay in order to establish a bona fide discovery before operations are suspended.

The Standard Oil Co., which owns every alternate square mile in fee, is the largest single operator in the Kettleman Hills Field with 14 strings of tools in operation. Rotary equipment is being rigged up in two additional wells. The Standard, Milham and Marland all have drilling projects nearing the pay and this work may bear watching during the next several weeks.

The Standard Oil Co. started construction work a few days ago on a tank farm and new pump station to be located at the base of the Kettleman Hills Field in order to facilitate the movement of crude oil out of this district. It is the intention of the Standard to lay a new line from the Kettleman Hills Field to tidewater. The western terminal will probably be located at Port San Luis in San Luis Obispo County, a distance of approximately 100 miles. In addition to this construction work, the Standard is putting the finishing touches on its new natural gasoline plant which is located about a mile north of The Texas Company's plant, which has been in operation for several months. Construction

(Continued on Page 126)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	6,890	br. sh. drilling
American Oil Co., No. 1 Camarillo, Ventura Co.	33- 2-20	1,200	hd. sd. drilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-13	44	hd. sd. drilling
Superior Oil Co., No. 1 Santa Paula, Ventura Co.	14- 4-21	820	suspended
Craise, F. A., No. 1 South Mountain, Ventura Co.	17- 3-21	Rig	suspended
Miley, E. J., No. 2 Red Mountain, Ventura Co.	7- 3-23	1,460	hd. sd. drilling
Shell, No. 1 Simi, Ventura Co.	31- 3-17	2,914	redrilling
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	3,765	suspended
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	6,740	suspended
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	806	sd. sh. drilling
Lockwood Oil Co., Well No. 1, Ventura Co.	28- 8-21	Rig	suspended
Milham Explin., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well, idle
Milham Explin., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well, idle
Milham Explin., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well, idle
Milham Explin., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well, idle
Milham Explin., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well, idle
Milham Explin., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well, idle
Milham Explin, No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explin., No. 8-A Buttonwillow, Kern Co.	8-28-23	2,673	gas well, idle
Milham Explin., No. 9 Buttonwillow, Kern Co.	8-28-23	Mtl.	building rig
Milham Explin., No. 10 Buttonwillow, Kern Co.	8-28-23	Mtl.	building rig
Aldrich, D. C., No. 1 Buttonwillow, Kern Co.	12-28-23	Mtl.	grading
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	6-28-23	190	suspended
Richfield Oil Co., No. 2 Semitropic, Kern Co.	36-27-23	7,170	br. sh. drilling
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	3,409	suspended
Elmer Oil Co., No. 1 Shafter, Kern Co.	8-28-25	6,100	suspended
Elmer Oil Co., No. 1 Bena, Kern Co.	15-30-30	2,592	hd. sd. drilling
Elmer Oil Co., No. 1 Rosedale, Kern Co.	33-29-26	2,781	fishing
Taft Drlg. Co., No. 1 Union Avenue, Kern Co.	2-30-27	1,770	sd. sh. drilling
Shell Oil Co., No. 1 Lerdo, Kern Co.	5-29-27	3,770	recemented
General Pet., No. 1 McFarland, Kern Co.	25-26-25	5,450	gas show
Union, No. 2 San Emidio, Kern Co.	5-10-21	3,630	br. sh. drilling
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	2,260	sd. sh. drilling
Currency Pet. Co., No. 2 Jacalitos, Fresno Co.	14-21-14	318	sd. sh. drilling
Hornaday & Huggins, No. 1 Kerman, Fresno Co.	32-14-18	3,715	cleaning out
K. C. L. Oil Co., No. 1 Joaquin Ridge, Fresno Co.	7-19-15	114	suspended
Oceanside Oil Co., No. 1 Krayenhagan, Fresno Co.	33-22-17	738	cleaning out
Petroleum Securities, No. 1 Kerman, Fresno Co.	20-20-16	Mtl.	building rig
Petroleum Securities, No. 2 Kerman, Fresno Co.	28-20-16	555	sd. drilling
Shell Oil Co., No. 1 Westhaven, Fresno Co.	24-19-18	860	survey hole
Shell Oil Co., No. 2 Westhaven, Fresno Co.	26-19-18	371	survey hole
Shell Oil Co., No. 3 Westhaven, Fresno Co.	27-19-18	Rig	survey hole
Shell Oil Co., No. 4 Westhaven, Fresno Co.	17-19-19	Rig	survey hole
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	3,700	redrilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	3,540	redrilling
Midwest Refining Co., No. 1 Huasna, San Luis Obispo Co.	34-31-15	Rig	rigging up
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	3,891	br. sh. drilling
Garllepp, Fred, No. 1 Betteravia, Santa Barbara Co.	20-10-35	Rig	rigging up
Shell, No. 3 Guadalupe, Santa Barbara Co.	25-10-35	1,910	sd. sh. drilling
Shell, No. 4 Guadalupe, Santa Barbara Co.	36-10-35	1,701	sd. sh. drilling
Shell, No. 2 Goleta, Santa Barbara Co.	36- 5-31	4,305	sd. sh. drilling
Petroleum Securities, No. 1 Goleta, Santa Barbara Co.	.....	3,070	sd. sh. drilling
Union, No. 1 Buel Canyon, Santa Barbara Co.	X- 7-31	1,622	hd. sd. drilling
Western Gulf., No. 1 Point Conception, Santa Barbara Co.	X- 5-33	3,115	oil sand
Standard, No. 1 Point Conception, Santa Barbara Co.	Z- 5-34	2,428	suspended
Nevada Standard, No. 1 Goleta, Santa Barbara Co.	10- 4-28	4,475	gr. sd. drilling
General Pet., No. 1 Elwood, Santa Barbara Co.	21- 4-28	3,794	br. sh. drilling
Pacific Western, No. 1 Naples, Santa Barbara Co.	7- 4-29	2,612	sd. sh. drilling
Padre Oil Co., No. 1 Dos Pueblos, Santa Barbara Co.	18- 4-27	3,141	br. sh. drilling
System Oil Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	2,852	hd. sd. drilling
Keystone Oil Co., No. 1 Santa Maria, Santa Barbara Co.	33-10-34	101	sd. drilling
American Oil Co., No. 1 Summerland, Santa Barbara Co.	33- 4-25	809	suspended
Getty, Geo. F., No. 2 Summerland, Santa Barbara Co.	22- 4-26	.....	location
Lincoln Drlg. Co., No. 1 Summerland, Santa Barbara Co.	22- 4-26	625	cemented
Keystone Oil Co., No. 1 Surf, Santa Barbara Co.	18- 7-35	Rig	rigging up
Gaviota Oil Co., No. 1 Surf, Santa Barbara Co.	18- 7-35	.....	location
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	Mtl.	suspended
Channel Oil Co., Well No. 1, Santa Barbara Co.	29- 4-27	6,304	suspended
Channel Oil Co., No. 1 Fellowship, Santa Barbara Co.	29- 4-27	1,080	redrilling
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	4,130	gas well
Continental, No. 2 Carpenteria, Santa Barbara Co.	33- 4-25	3,480	gas showing
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	615	hd. sd. drilling
Italo American, Well No. 1, Colusa Co.	20-13- 3	760	hd. sd. drilling
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	redrilling
Applegate & Renshaw, Well No. 1, Merced Co.	24- 6-10	3,721	hd. sd. drilling
Kuhns, H. L., Well No. 1, Merced Co.	8-12-19	440	gr. sd. drilling
Calhoma Oil Co., No. 1 Livermore, Alameda Co.	9- 3- 3	1,549	will test
Shell, No. 1 Dudley, Monterey Co.	15-22- 9	3,022	redrilling
Union, No. 1 San Lucas, Monterey Co.	8-22- 8	1,010	sd. sh. drilling
Marland, No. 1 Bradley, Monterey Co.	32-24-11	5,930	oil sand
Tuck Oil Co., No. 1 Los Gatos, Santa Clara Co.	15- 8- 1	852	suspended
Dudley Ridge Synd., No. 1 Tulare, Kings Co.	12-19-19	1,305	gas, shut in
O'Donnell, J. E., No. 1 Tulare, Kings Co.	7-23-20	.....	location
Associates Pet., No. 1 Lewis Creek, San Benito Co.	5-19-10	501	hd. sd. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

The Texas Company, No. 1 Clearwater, Los Angeles Co.	8- 4-12	106	sd. drilling
Standard, No. 1 Hawthorne, Los Angeles Co.	5- 3-14	5,104	gr. sd. drilling
Circle Oil Co., No. 1 Gardena, Los Angeles Co.	23- 3-14	4,280	suspended
Allied Pet., No. 1 Redondo, Los Angeles Co.	28- 3-14	5,475	suspended
Shell, No. 1 Redondo, Los Angeles Co.	20- 3-14	3,805	abandoning
Jackson, R. W., No. 1 Whittier, Los Angeles Co.	19- 2-11	1,477	set pipe
Burlingham Pet. Co., No. 1 Compton, Los Angeles Co.	17- 3-13	2,204	cemented
Lee & Brainerd, No. 1 Rosecrans, Los Angeles Co.	17- 3-13	Mtl.	building rig
Hansen, N. J., No. 1 Watson, Los Angeles Co.	17- 4-13	Rig	suspended
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	2,982	suspended
Pugh Miller Drlg. Co., No. 1 Calabasas, Los Angeles Co.	6- 1-17	2,550	suspended
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	25- 3-17	1,704	redrilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,160	hd. sd. drilling
Beard, G. F., No. 1 Brea Canyon, Los Angeles Co.	30- 2- 9	3,316	sd. sh. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	1,508	sd. sh. drilling
Urmi Oil Co., No. 1 Puente, Los Angeles Co.	31- 3- 8	Rig	rigging up
Shell, No. 1 Coyote, Los Angeles Co.	28- 3-10	3,275	sd. sh. drilling
Prairie Oil Co., No. 1 Montebello, Los Angeles Co.	32- 1-12	2,354	sd. sh. drilling
Monterey Park, No. 1 Jepson, Los Angeles Co.	25- 1-12	4,101	sd. sh. drilling
Union Oil Co., No. 1 Richfield, Los Angeles Co.	13- 3- 9	Rig	rigging up
Southwestern Drlg. Co., No. 1 Richfield, Los Angeles Co.	21- 3- 9	5,070	br. sh. drilling
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	490	cleaning out
So. Calif. Drlg. Co., No. 1 Newhall, Los Angeles Co.	13- 3-16	140	sd. sh. drilling
Pico Dome, No. 1 Hasley Canyon, Los Angeles Co.	14- 3-16	530	hd. sd. drilling
Calif. Eastern, No. 1 Wickham, Los Angeles Co.	32- 5-17	3,517	suspended
Coastline Oil Co., No. 1 Devil Canyon, Los Angeles Co.	21- 5-17	514	suspended
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,516	gr. sd. drilling
Hall Pet. Co., No. 1 Murrietta, Riverside Co.	23- 7- 3	975	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,245	recemented
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
Davenport Oil & Gas Co., No. 1 San Marcos, San Diego Co.	30-12- 8	847	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	1,972	suspended
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	X-13- 4	Mtl.	building rig

Lea County Well Proves Disappointing

Test in San Simeon District Had Hole Full of Sulphur Water. Bent County, Colorado, Test in Granite. Two Wildcats in Yuma County

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., June 22.—The Empire Gas & Fuel Co.'s No. 2-B State, in the San Simeon district in Lea County, New Mexico, three-fourths of a mile south and east of its No. 1 State, and 2½ miles east of its No. 1-C State, is reported to have a hole full of sulphur water at 3,900 feet. The Midwest Refining Co. has made two new locations in Lea County and two of the Marland Oil Co. and two of the Humble Oil & Refining Co. wildcats are getting under way. The Pueblo Oil Co.'s No. 1 Crosby in the Jal district, has been shut in as an 18,000,000-foot gasser. The Acme Development Co.'s wildcat in Valencia County is in a water sand at 3,800 feet.

Colorado had a disappointment in the Marland Oil Co.'s Pipe Springs test in Bent County, reported in granite at 4,320 feet. The general area in which this well is located in southeastern Colorado is being surveyed extensively by several companies with geophysical instruments. Oil at last reports was standing 1,200 feet in the Five Square Oil Co.'s No. 1-A State, on the Berthoud Dome, in Larimer County, after having cleaned itself, but with the tools still at the bottom and holding up completion. W. M. Conley completed an average well in the south extension of the Florence Pool in Fremont County, and the Texas Production Co. abandoned its No. 1 State-Oliver on the Tow Creek Dome in Routt County. The White Eagle Oil & Refining Co.'s test on the Piceance Creek structure in Rio Blanco County, encountered a bed of maltha.

The five or six wells in the Black Mountain Field in the Big Horn Basin in Wyoming are to be opened and tested by the Utah Oil Refining Co. to determine whether there is sufficient production to justify the construction of a pipe line. There were no completions in Wyoming though several wells are drilling close to the objectives.

NEW MEXICO

While southeastern New Mexico is in the midst of its greatest drilling campaign, important developments were rather limited the past week. A discouraging report came in from the Empire Gas & Fuel Co.'s No. 2-B State, NW SW SE Section 8-21-35, in the San Simeon district in Lea County, which at 3,900 feet was reported to have a hole full of sulphur water. The 6⅝-inch was set at 3,853 feet in gray lime. This well is three-fourths of a mile south and east of its No. 1 State, and 2½ miles east of its No. 1-C State. Two new locations were announced by the Midwest Refining Co., both in Lea County. One of these is No. 24 Leach, NE SE NW Section 15-19-38, in the Hobbs area, 3 miles southwest of the discovery well on the Hobbs High, and the other is No. 31 Hughes, SW cor. NW Section 19-23-37. The Midwest's No. 31 Capps, SW cor. Section 3-19-38, Hobbs district, is bottomed in anhydrite at 2,790 feet at which depth the 10-inch was cemented. Two of the Marland Oil Co.'s wells have got under way: No. 1 McCallister, SW cor. SE Section 24-26-36, drilling at 300 feet, and No. 1 Flint, SE cor, Section 28-20-34, drilling at 1,300 feet. The Empire Gas & Fuel Co.'s No. 1 Martin, SW NE Section 28-20-32, is drilling at 2,500 feet, and No. 1 Closson, NW SE Section 6-22-36, at 1,700 feet. Henry Walker and others' No. 1 Terry, NW SW SE Section 10-19-38, in the Hobbs district, is rigging up, and Joe Cook and others' No. 1 State, SW NW NE Section 12-21-33, commenced spudding on June 6 and is drilling at 350 feet in red rock. The Texas & Pacific Coal & Oil Co.'s No. 1 State, SE cor. SW Section 22-23-36, has been plugged back to 3,668 feet and is making, estimated, 15,000,000 feet of gas from sand at 3,661-66 feet, and its No. 2 State, NW cor. SW Section 21-23-36, is rigging up. The Rector Oil Co.'s No. 1 King, SE NE NE Section 26-25-32, is drilling at 700 feet in red rock. The two Lea County wells of the Humble Oil & Refining Co. are getting under way, its No. 1 Bowers, C NE SE Section 35-15-38, spudding at 70 feet, and No. 1 Lindley, C NE NE Section 23-25-36, drilling at 138 feet in sand. The Midwest Refining Co.'s No. 22 Gregory NW SE SW Section 31-25-37, in the Jal district, is drilling at 2,865 feet in broken lime. It had a small show of oil at 2,860-65 feet.

Jal District

The Gypsy Oil Co.'s No. 1 Humphreys, NW cor. SW Section 25-25-36, in the Jal district, is drilling at 1,980 feet in salt, and its No. 1 Mattern, SW cor. SE Section 24-21-36, in the Eunice district, is fishing at a total depth of 3,580 feet. The Texas Production Co.'s No. 1 Humphreys, NE cor. SW Section 18-20-32, is drilling in gray lime at 2,640 feet, and its No. 1 Shepherd, SE cor. NE Section 6-26-37, is fishing at 3,223 feet. Cranfill & Reynolds' No. 1 Wilson, NE NW NE Section 23-25-36, after plugging back to 3,400 feet, is on the pump. It made 36 barrels of oil and 7 barrels of water the first five hours. The same company's No. 1 Meyers, NE cor. SE Section 22-24-36, is drilling at 2,075 feet in salt and potash, and its No. 1-B State, NE cor. Section 2-21-33, is drilling at 605 feet in red rock and fighting a cave. Bull & Hagen's No. 1 State, C NE Section 33-11-35, is drilling at 1,560 feet in red sand, and the Shell Petroleum Co.'s No. 1 Terry, SW NE Section 22-19-38, in the Hobbs district, is drilling at 1,112 feet and fighting cavy ground. The Pueblo Oil Co.'s No. 1 Crosby, SW SW Section 29-25-37, in the Jal district, which has been showing considerable gas, is shut in at a total depth of 3,075 feet. The biggest increase in gas was at 3,065-75 feet, the quantity being 18,000,000 feet a day. Henderson, Dexter & Blair's No. 1 McDonald & Jewett, SE cor. Section 18-20-34, was plugged back to 3,515 feet and has been pumping 12 hours each day. It averaged 50 bbls. of oil and 7 bbls. of water the first 2 days. The Vacuum Oil Co.'s No. 1 State center west section line Section 13-17-34, is shut in at a total depth of 4,710 feet. It was making around 7 bbls. of oil an hour and at 4,677-4,704 feet the gas showed a considerable increase.

Eddy County

In Eddy County interest is centering principally on the wells in the Jackson area northeast of the Artesia Pool. Flynn, Welch & Yates' No. 2 Gissler, SE cor. SW Section 12-17-30, half a mile northwest of No. 1 Jackson, is drilling below 2,200 feet and encountered a break at 1,915-30 feet which corresponds with the first major break in No. 1 Jackson. The Midwest Refining Co.'s No. 31 Lane, SW cor. Section 28-19-30, is drilling at 1,570 feet in red shale, anhydrite and lime, and the Mesa Oil Co.'s No. 1 Seale, SW SW Section 15-20-27, has commenced spudding. The Pueblo Oil Co.'s No. 4 Russell, NW cor. Section 18-17-31, is drilling at 500 feet, and its No. 1 Lee, NW cor. Section 34-17-29, below 1,000 feet. The latter encountered a pocket of gas at 907 feet. The Grayburg Oil Co.'s No. 2 Burch, C NW SW Section 19-17-30, is drilling at 2,900 feet and had an oil show at 2,800 feet. Leonard & Levers' No. 1 State, NW cor. Section 19-20-30, is drilling at 300 feet, and the Prairie Oil & Gas Co.'s No. 2 Keel, SW cor. Section 7-17-31, at 600 feet. The Ohio Oil Co.'s No. 1 Sellery, SE cor. Section 22-16-30, is drilling at 2,100 feet.

In Roosevelt County, Sloan & Smith's No. 1 Lovern, C SE Section 4-3s-35, east of Portales, is drilling at 2,935 feet in anhydrite, and in Otero County, Samuel Butler and others' No. 1 Wingo, SE NE SW Section 17-26-11, is drilling at 245 feet in shale.

In Valencia County, the Acme Development Co.'s No. 1 Santa Fe Ry. SW NW Section 27-7n-4w, on the South Suwanee structure, is bottomed in a gray water sand at 3,800 feet and preparing to run the 5⅜-inch.

In San Juan County, the Milwaukee-New Mexico Syndicate's No. 1 Beardsley, C NE Section 30-28-11, Kutz Canon district, is preparing to plug the hole at a total depth of 1,892 feet, 29 feet in the Lewis shale. The Picture Cliff sand, 105 feet thick, was dry.

UTAH

The Continental Oil Co.'s Boundary Butte test in Section 22-43-22, in San Juan County, southeastern Utah, is drilling ahead slowly at 5,239 feet, only 18 feet of new hole being made the past week on account of the heavy gas pressure and with no important change in conditions. One other operation in San Juan County which will be watched during the next few weeks is the Boulder Knoll Oil & Gas Co.'s No. 1 Endter, NW NW Section 17-34-25, near Monticello, which has been idle at 2,640 feet for the past year with considerable gas appearing through a hole full of water. The 6¼-inch casing has been underreamed and set on bottom to shut off the water and drilling out the plug will begin in a few days. In Grand County, the Western Crude Oil Co.'s No. 1, Section 4-20-23, in the Cisco Springs district, has rig up and crew on the ground and is about ready to begin spudding. The Utah Southern Oil Co.'s No. 1-A J. L. Shaffer, Section 36-26-20, Cane Creek Dome, is drilling at 3,890 feet in salt. Water has been shut off and hole bailed dry. In Wayne County, the Phillips Petroleum Co.'s No. 1 Shick, Section 16-27-16, set the 6⅝-inch casing at 4,985 feet for a formation shutoff. The hole is bottomed in the lower Hermosa lime. In Uinta County, the Maud Ellen Oil Co.'s No. 1, Section 28-3s-21, on the Neal Dome, is drilling at 1,525 feet in lime and is reported to have some shows of oil and gas. It is in the top of the Pennsylvanian and close to the first objective. In Millard County, the Beaver Valley Oil Co.'s No. 1, Section 20-25-9, on the Blackrock structure, is bottomed in sand at 3,425 feet with a show of oil and gas and some water leaking in from the shale above. The 3-inch pipe has been cemented on bottom.

COLORADO

Discouraging reports were received this week from the Marland Oil Co.'s No. 1, NE cor. SE Section 27-27-49, on the Pipe Springs structure in Bent County, in southeastern Colorado, a wildcat that has been closely watched on account of

(Continued on Page 151)

RAPID PROGRESS IN TURNER VALLEY; JUNE PRODUCTION 100,000 BBLS.

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, June 24.—In the Turner Valley Field southwest of Calgary, Home Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, which has been testing production in the deep lime at 5,507 feet, is reported lately to have averaged around 600 bbls. a day, approximately the same as Home's No. 1 made in the first few weeks. Home's No. 2 is being finished at the present depth, and the diamond drill is being moved to Home's No. 3, same LSD, which has been standing cemented in the top of the lime at 5,033 feet, and will be drilled in at once. Home Oil Co. is securing additional surface rights to move its camps a safe distance from the wells, and to group all separators and tanks so one crew can handle them. Despite warm weather, which normally results in smaller production, Home's No. 1 is reported maintaining a production around 800 bbls. a day.

Northwest Associated's No. 1, LSD 6, Section 20-19-2w5, cemented in the top of the lime at 5,188 feet, has started to drill out the cement. This is the first test on the west side of the structure in the south end to drill into the deep lime.

On the central section, Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is filling the cellar with concrete and clamping the control head to enable pressure to be applied to the well. It has been making between 400 and 500 bbls. a day with 200 pounds back pressure, but with this increase a larger naphtha recovery, possibly around 600 bbls., is thought possible. Leakage in the cellar and at the control head has been shut off. Okalta's No. 2, LSD 8, same section, has pulled 6¾-inch casing and is planning to carry 8-inch to the top of the lime. This test, which has been making a little light crude from 3,170 feet, will be carried to the deep lime horizon. Okalta's No. 4, LSD 8, same section, is building derrick, and as soon as this is up, work will be started on derrick for No. 5, LSD 7, same section. Okalta's No. 6 will be started later in the summer, probably as soon as Nos. 2 or 3 are finished in the lime.

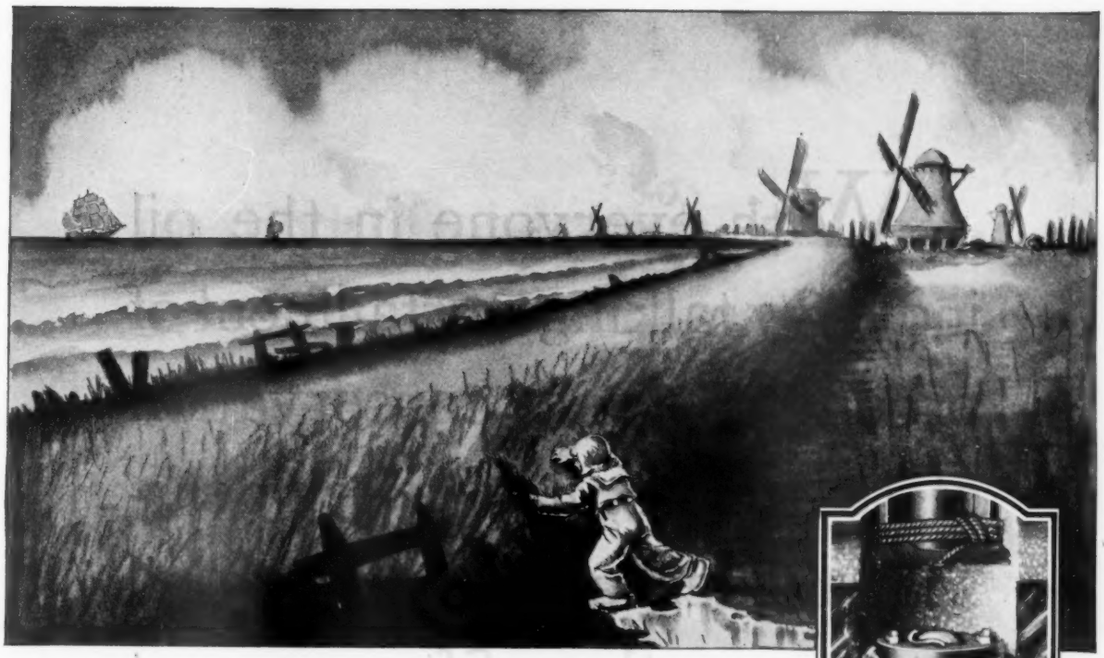
McLeod Operations

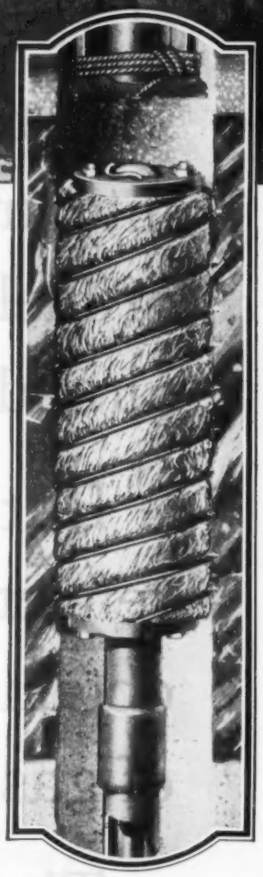
McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is drilling 1,265 feet in the lime at 4,995 feet, making 18,000,000 feet of gas with partial crude naphtha recovery around 100 bbls. a day. McLeod's No. 3 is at 5,000 feet and making 13,000,000 feet a day, with actual crude naphtha recovery around 60 bbls., which may be increased. McLeod's No. 1 at 3,930 feet is making 50 bbls. a day. McLeod's No. 5 has been tentatively located in the same LSD southwest of No. 3 and further west than the other wells; but will not start drilling till No. 2 or No. 4 is definitely completed.

New McDougall-Segur's No. 1, same LSD, which had a light crude production of around 10 bbls. at 2,495 feet, was shot to increase production, and is cleaning out preparatory to running 12½-inch casing.

Great West Oil Co.'s No. 2 will start

(Continued on Page 125)





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By close attention to design and construction, Guiberson has succeeded in manufacturing a Bottom Water Plug for which the Dutch boy is a perfect symbol. Here is a plug which operates on the principle of a screw in wood. When its steel spirals are collapsed into position, they take a screw-like hold which is unbreakable. Gas pressure cannot blow it out and its oakum packing, which will outlast the well, does not permit the passage of a drop of water. Faithfulness is insured by the principle of its construction and that means that complete reliance may be placed in the Guiberson Spiral Bottom Water Plug. Fully patented.

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But that is what some refiners are doing in order to obtain less than fifty percent of gasoline from the gas oil

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method of operation will produce the maximum in gasoline from either gas oil or fuel oil and no fuel oil will be left to be added to the surplus

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Good Producer Found in Old Lima Field

Seneca County Well Making 360 Bbls. Opens New Development in Eastern Part of the Trenton Rock Field

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 24.—While Indiana and Illinois failed to report any new completions for the week, the Lima Field is once more in the limelight with the big producer found in the Tiffin Field of Seneca County, which produced 360 bbls. in 24 hours, opening up a new development for the eastern part of the Trenton Rock Field. The completion of a 205-bbl. producer on the Helphrey farm in Muskingum County in the Central Ohio Field, shows there is still plenty of good-looking territory to drill in the field of numerous pay sands from shallow to a great depth.

Ahe outstanding well in the old Lima Field of northwestern Ohio is that of J. H. Murphy & Son, in a test 200 feet from the north line and 600 feet from the west line of the Charles B. and Ida L. Miller farm, known on the oil map as the F. R. Edwards farm, in the northwest quarter of the southwest quarter, Section 31, Pleasants Township, Seneca County. The top of the Trenton was found at 1,418 feet and at 25 feet in the sand, total depth 1,443 feet, the well flowed at the rate of 15 bbls. an hour in sump hole and gradually increased to 38 bbls. an hour and would have flowed still more if opened full. It is good for 360 bbls., and was reported at 200 bbls. It is holding up remarkably and should bring about another heavy development for the Tiffin area. J. H. Murphy & Son opened the rich pool in Liberty Township, same county, a couple of years ago which produced some wonderfully large wells. The well owners are natives of Seneca County and have been successful in getting a large production, having refused at one time $250,000 for their Liberty Township holdings which they secured by an investment of probably $25,000.

Several wells are being planned near the late one. At one time the Sun Oil Co. held practically all this acreage but let it go some years ago. T. F. O'Brien and others are drilling on the Ida M. Rosenberger farm, same section.

Northeast of Lima and between there and Findlay, in Bath Township, Allen County, some fairly good pumpers are being found in territory overlooked in the earlier days which now comes in handy for those having acreage to develop there. B. L. Carmon and others' No. 5 well, 500 feet from the south line and 250 feet from the lest line of the William H. Hall farm, in the southest quarter of Section 13, Bath Township, produced an initial of 35 bbls., the Trenton being topped at 1,363 feet and drilled 49 feet in the sand. Neely & Nolan's No. 5 well, 1,170 feet from the north line and 1,050 from the east line of the Philo Bassett farm, in the Southwest quarter of Section 11, same township, topped the Trenton at 1,326 feet and drilled 38 feet in the sand to a total depth of 1,364 feet, getting a 15-bbl. pumper. In the same area C. A. and F. J. Peavy's test in the southwest corner of the E. F. Sandy farm, in the southeast quarter of Section 12, pumped 15 bbls. initial at from 1,344 to 1,377 feet, or 33 feet in the Trenton.

In Hancock County, Eagle Township, Star & Clark's No. 12 well, 600 feet from the south line and 200 from the east line of the Alice Stauffer farm, on the oil map as the Noah Foltz farm, in the northeast quarter of Section 6, is a 15-bbl. pumper. Sand was topped at 1,330 feet and drilled 50 feet into the sand. Biglick Township, this county, is attracting a little attention since Robert Mitchell, trustee, drilled in No. 3 on the Alva Beard farm, on the oil map as the D. and R. Moore farm, in the southwest quarter of Section 16, and some new work is being planned. The Mitchell well produced an initial of 40 bbls., the sand being topped at 1,243 feet and drilled 43 feet into the sand.

CENTRAL OHIO

Thirty completions were reported from the central Ohio fields since the last review, of which 11 were oil wells with an initial production of 365 bbls., 10 dry holes and 9 gas wells. In new work under way, the week shows 25 new locations staked out and 31 wells spudding. Work is increasing to some extent and more activity is indicated in the various areas where the Berea sands are found to contain both gas and oil in commercial quantities, and there is practically a market for either product at most any point in the producing areas. Seldom is a large oil well found in the Berea sand but even a small stripper pays as the cost of wells are trifling when compared with the deep Clinton and Niagara lime formations. Besides there is the gas to dispose of which adds to the value of the wells.

In Ashland County, Greene Township, the Ohio Fuel Gas Co. reports a dry hole in the Clinton in No. 1-3,527 on the J. H. VanHorn, Section 23. Same company made locations for tests on the Eliza C. Crowell and Jason Campbell farms, both in Section 21, and No. 1-3,106 on the John W. Gordon, Section 12, is drilling. The Kemrow Co. is drilling on the Ben Evil, Section 29, same township. In Jackson Township, the Kemrow Co. is drilling on the Henry Miller, Section 6, and the Ohio Fuel Gas Co. is drilling No. 1-3,621 on the S. V. Plice, Section 29. In Miflin Township, the Kemrow Co. has a fair gas well on the Upton Andress, Section 14. In Lake Township, the Southern Oil Co. drilled a dry hole on the Herman Shearer farm, Section 14. Curtis and others are drilling No. 2 A. C. Metcalf, Section 22. No. 1 on this lease is still a rig. Robinson and others are drilling No. 1 C. I. Sellers, Section 9, and the Mohican Oil & Gas Co.'s No. 3 D. B. Chesrown, Section 3, looks like an average gas well. In Perry Township the Logan Gas Co. is drilling a second test on the D. Devault, Section 29, and Coast and others are drilling No. 5 on the Ed Barnhary, same section.

Medina County

In Medina County, the Ohio Fuel Gas Co.'s No. 1-983 on the Clyde Steele, Section 7, Westfield Township, drilled deeper, showed a nice increase in its gas volume. Same company is drilling No. 1-3,581 on the Adam S. Arnold, Section 7-12, Lafayette Township. East Ohio Gas Co. is drilling No. 4 J. J. Jalensics, Lot 2, Chatham Township. In Harris Township, Jones and others' No. 1 Joseph Funk, Section 6, is reported good for 10 bbls., with No. 2 drilling. Harmon & George report a dry hole in No. 3 on the W. W. Wood, Lot 151, same township.

In Lorain County, Columbia Township, the Ohio Fuel Gas Co. got a dry hole in No. 1-3,403 on the A. W. Taylor, Section 17. Ohio Fuel Gas Co. has a nice gas well in No. 3-3,528 on the Fred L. Nobles, Section 1, and drilling No. 1-3,586 on the Johanna Weily, Section 18, and made a location on the Earl C. Freback, Section 21. In Grafton Township, same company is drilling No. 1-3,609 on the Frank K. Nobles, Lot 11. Daugherty and others are starting a test on the Henry Smith, Section 7, Carlisle Township.

In Wayne County, Clinton Township, Curtis & Davidson got a very light gas well on the J. H. Metcalf 80 acres, Section 24, and disposed of the well to the landowner who will utilize the gas for light and heating purposes on his property. Ohio Gas Co. made locations for No. 2-3,628 on the C. J. Warner heirs, Section 28, Congress Township, and No. 1-3,626 on the Jasper McVickers, Section 6. In Chester Township, the same company is drilling No. 2-3,627 on the Paul D. Goudy, Section 8, and made a location on the J. W. Twigg, Section 13.

In Holmes County, the Kemrow Co. made a location for a second test on the Mary Becker, Lot 20, Hardy Township.

Richland County

In Richland County, Monroe Township, the Ohio Fuel Gas Co.'s No. 1-3,492 on the Phoebe Herring, Section 33, is a duster.

In Knox County, Berlin Township, Schenker Brothers are drilling on the John Spohn farm, Section 9. Ohio Fuel Gas Co. made a location on the George W. Beckley, Sections 1 and 21, Jackson Township, and is drilling No. 1-3,587 on the G. H. Kayler, Section 4, Brown Township. Harry Perkins is starting a test on the William Hoovler, Section 1, Monroe Township, same county.

In Coshocton County, Pike Township, the Leonard Oil & Gas Co.'s No. 4 on the Levi Norris, Section 19, is reported good for 30 bbls. at from 3,298 to 3,348 feet. Bell Brothers drilled in a very light gas well on the Baine farm, Section 19, Newcastle Township, at from 712 to 719 feet. Ohio Fuel Gas Co. made a location for No. 1-3,582 on the Jesse Grant, Section 12, Monroe Township, and the Preston Oil Co. made a location for No. 2-1,327 on the Etta McClain, Section 21, Newcastle Township.

In Summitt County, Greene Township, the Ohio Stock Food Co. got a light showing of oil on the company's property, Section 9, while drilling for gas, but it was too light for pumping. Morgan Houge and others are drilling a second test on the Samuel Harring, Section 17, and the East Ohio Gas Co. is drilling on the Ada Leighton, Section 7, and made a location for No. 1 on the E. E. and L. M. Diehl, same section. Same company made a location on the Nancy Rhodes, Section 23, Franklin Township, same county.

In Licking County, Newton Township, the North Fork Oil Co.'s No. 46 on the Ed McKinney, Section 11, produced an initial of 17 bbls. at from 561 to 569 feet. Hope Construction & Refining Co.'s second test on the Sarah Rector, Section 9, Perry Township, is reported good for 5 bbls. Preston Oil Co. is drilling a second test on the Ollie Lear, Section 5, same township. Ohio Fuel Gas Co. made a location for No. 1-3,602 on the Thomas Moran, Section 10, Fallsburg Township, and the Emerald Petroleum Co. is drilling No. 5 on the John W. Little, Section 8. Preston Oil Co. drilled a 5-bbl. pumper on the S. E. Walpole, Section 23, Madison Township, in the Berea sand from 731 to 740 feet.

Muskingum County

In Muskingum County, Jackson Township, the Hope Construction & Refining Co.'s No. 7 on the W. E. Halphrey, Section 6, is credited with an initial production of 205 bbls. This farm has developed some very good wells. No. 8, same farm, is under way. The Pure Oil Co. is drilling No. 1 Jasper Ashcroft, Section 4. Ohio Fuel Gas Co. made a location for No. 1-3,610 on the Amelia Smith, in the third-quarter section of Falls Township, same county.

In Athens County, Ames Township, the Ohio Fuel Gas Co. has a very good gas well in No. 2-3,542 on the B. M. Carpenter, in Fractional Section 2, in the Upper Berea sand from 1,493 to 1,525 feet, total depth 1,587 feet. Same company has an average size gas well in No. 1-3,562 on the O. E. Woolley, Sections 5 and 6, same township, at from 708 to 715 feet. Same company is drilling No. 3-3,625 on the John Fleming, Fractional Section 2, and made a location for No. 2-3,624 on the George Linscott, in Sections 5 and 6, same township. Logan Gas Co.'s No. 72-3,080 on the Sunday Creek Coal Co. land, Section 29, Dover Township, at from 3,626 to 3,652 feet, total depth, 3,720 feet. In Berne Township the Ohio Fuel Gas Co. made a location for No. 1-3,590 on the Flora Fleming, Section 35, also for No. 2-3,591 on the same farm. Farr & Cody drilled a dry hole on the Myrtle Runnion, Fractional Section 36, Carthage Township, same county, at 1,185 feet. Gross & Freebault drilled a dry hole in a second test on the G. H. and J. Kern, in Section 20, Athens Township, in the Upper Berea sand at from 1,103 to 1,150 feet, total depth 1,165 feet. Charles F. Fox and others' second test on the Lena Bean, Section 18, Cannan Township, is reported good for 10 bbls. initial production. In Lodi Township, the Ohio Fuel Gas Co. is drilling No. 1-3,187 on the O. E. McGirr, Section 4. Same company made a location for No. 1-3,599 on the W. and C. Richardson, Sections 1 and 31, Rome Township, this being a purely wildcat venture.

In Meigs County, Simon Lebow and others' No. 3 on the Raymond Krauter, Section 20, Sutton Township, is an 8-bbl. initial producer at from 684 to 702 feet. Tyree and others are drilling No. 10 William Carnahan, Section 11, and drilling deeper No. 1 on the Mary Jividen, Section 23. Southern Petroleum Co. is drilling on the Peter D. Kerr, Section 11, same township. W. H. Shipe and others are drilling on the William and Lena Wells, Section 28, Salisbury Township.

Vinton County

In Vinton County, Knox Township, Townsend and others' No. 3 on the David A. Huston, Section 1, is a dry hole in the Upper Berea at from 1,072 to 1,076 feet.

In Starke County, Lawrence Township, the Penn Oil & Gas Co.'s No. 1 A. M. Nichter, Section 4, is reported a fair gas well, with No. 2 drilling.

In Columbiana County, Knox Township, George Keil's No. 12, Owen Brook farm, is reported at 2 bbls.

In Fairfield County, Berne Township, the City Natural Gas Works is drilling on the Phil Farmer, Section 1, and made a location for a second test on the John Holcomb, Section 24, Pleasants Township.

In Guernsey County, Wheeling Township, the Logan Gas Co.'s No. 1-3,089 on the J. C. Alloway farm, Section 10, is reported good for 50 bbls. natural. In this well the top of the Niagara lime was found at 3,448 feet. Lime sand found at 3,613 feet and oil pay at from 3,615 to 3,622 feet. The Local Co. is drilling on the James Sager, Section 19, and Rallston Oil Co. made a location on the William T. Virtue, Section 20. In Cambridge Township, the Ohio Fuel Gas Co.'s No. 1-3,524 on the Holley Ashley, Section 4, is reported at 25 bbls. natural. Top of Niagara in this well was found at 3,295 feet, and top of lime pay sand from 3,431 to 3,438 feet. Same company made a location on the Chancey Cropper, Sections 3 and 4, same township. Same company is drilling No. 3-

(Continued on Page 123)

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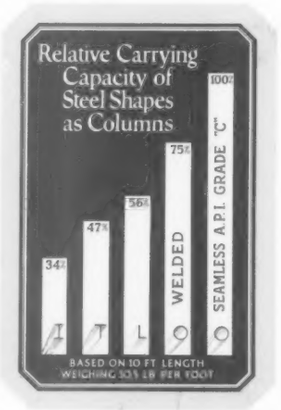
Whether or not a derrick will bear the heavy loads of drilling depends primarily upon the legs. Strength to carry heavy over-loads. Strength to stand the day-in and day-out grind of drilling and pumping.

Such strength has been built into Moore Champion Derrick legs by the use of pipe sections of 40-50 carbon seamless steel.



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The leg strength of the Moore Champion Derrick is coordinated with all other parts of the structure. As these parts have corresponding strength, in accordance with the demands, the result is the perfect balance of a real champion.

The Moore Champion Derrick Conforms to A. P. I. Standards in every respect.

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Stocks in All Principal Fields

New Pool Opened West of Yates Field

Taylor-Link Oil Co. of San Angelo Gets 30 Gravity Well on University Land. Former Tests May Define Pools East and Northwest

By L. E. Bredberg
Staff Correspondent, West Texas Fields

FORT WORTH, Tex., June 24.—While the crude oil market conditions seem to be tightening in West Texas there now looms on the horizon another pool which may have the possibilities of supplying a vast quantity of crude for the ever-growing demand. The Taylor-Link Oil Co. of San Angelo is the discoverer of what now seems to be a good commercial producer in a rank wildcat located approximately 18 miles west of the Yates Pool, almost wholly surrounded by dry holes, in an area which some geologists are trying to link up with the structure in the Yates Pool and the "Fort Stockton High." This new find changes the tune of many who were trying to correlate the Yates and the McCamey Pools, but so far have been unsuccessful on this trend.

The University of Texas will again be rewarded for leasing its land to oil operators and companies, for the several tests which are drilling in the vicinity of this new discovery, and the new discovery itself, is located on University lands, the surveys in this area being Nos. 16, 17, 18 and 20. Taylor-Link's well in the SW Section 30, Block 16, and this new find will validate leases on a large block of University of Texas land. If a sizable field is opened royalty will further swell the coffers of the university, which is and has been drawing money from Crane and Reagan County fields for several years.

The new find is now shut down at 1,628 feet, and has been flowing by heads for the past few days, the last gauge, ending at 7 o'clock this morning showed it flowed 117 bbls. during the 24 hours, gravity of the oil being approximately 30. Top of the pay is 1,613 feet.

Defined to Northwest

The Tidal Oil Co.'s No. 1 University, located in the SW Section 16, Block 20, University Survey, which encountered about 250,000 feet of gas last week is now shut down at 1,403 feet in lime, after encountering sulphur water at 1,315 feet. This test is approximately 4 miles northwest of the Taylor-Link well, no doubt defining that side of the new pool.

Buell & Hagan's No. 1 University, located in the SE Section 36, Block 18, 4 miles south of the Taylor-Link well, is now shut down at 1,332 feet. It topped the pay at 1,320 feet and the hole started filling with oil. The last 63 hours swabbing produced only 63 bbls. of oil, making this test rather doubtful at this writing, although it probably will make a commercial producer when put on pump.

Shell Petroleum Corp.'s No. 1 University, located in the SE Section 29, Block 16, is shut down at 1,770 feet in lime, flowing sulphur water from 1,735 feet. This test is 1 mile east of the Taylor-Link well, and consequently will throw interest from this direction to the area west or north of the discovery. Top of lime in the Shell well ran 1,430 feet and in the Taylor-Link well 1,375 feet, elevation on the latter being 2,500 feet and the former 2,486 feet. Elevation of the Buell & Hagan well is 2,760 feet. The lime has not yet been picked up.

Two miles southeast of the Taylor-Link well, the Sun Oil Co. drilled a "duster" in the NE Section 8, Block 17. Top of lime in this well was 1,630 feet, elevation 2,666 feet, and top of salt 865 feet, total depth 2,100 feet. This well will also help define this new pool on the east and southeast.

Five and a quarter miles west and three-fourths of a mile south of the Taylor-Link well, the Transcontinental Oil Co.'s No. 1 University in Section 18, Block 18, is shut down at 4,312 feet. Elevation of this well is 2,552 feet and top of lime is 1,036 feet. This well had a show of oil at 2,547 feet, but was drilled through, and did not pick up further showings. This test is a good marker for the western terminus of the new pool, if it is to run in that direction.

Other Locations Rumored

Taylor-Link have made location for their No. 2 University, offsetting No. 1 and 330 feet from the north and west lines of Section 31, Block 16, and other locations have been rumored and reported, but so far, no definite locations have been staked by any offsetting companies, although the acreage near this well is considerably cut up, as the accompanying map will show, and there is likely to be several wells started as soon as the discovery well is thoroughly proven as a commercial producer. The California Co. and Shell Petroleum Corp. are the largest holders of offset acreage.

The Humble Pipe Line Co. is erecting a 5,000-bbl. tank to handle the production of the Taylor-Link well, and if the well proves to be a good one, this company will no doubt lay a line from its station in the Yates Pool to take the production from this new area.

In the Pecos Valley Pool, Doran & McGee have shut down their No. 1 Pecos Valley Oil Co., located in Section 34, Block 3, H.&T.C. Survey, at 1,541 feet, in sandy lime. It is spraying about 2 bbls. of oil per day with about 2,000,000 feet of gas. The gas was estimated at 6,000,000 feet at first but it seems to be decreasing. This test is 1 mile north of the Pecos Valley discovery well, and does not look very promising for the present, although there is a chance for it to make a commercial producer. This is the first test in this pool to the north of the discovery, and it has been closely and expectantly watched, hoping that it would be a good well, and would extend the pool in that direction, as tests to the south of the discovery have been rather disappointing, and the southern edge has been defined.

There is a peculiar situation, at the present time, in the Waddell Pool, Crane County, where the Gulf Production Co.'s No. 7 Waddell has encountered no showings of oil although at a depth of 3,270 feet, and running high on the lime, top of the lime being 2,972 feet, with surface elevation of 2,770 feet. From 2,972-75 feet the well had 1,000,000 feet of gas, and the gas increased at a little deeper drilling, but the oil bearing horizon has long since been passed, and doubts are uppermost in the minds of many watching this area. This test seems to be a west edge well, is located in Section 10, Block B-23, P.S.L. Survey.

Gibson & Johnson's No. 1 Read, which has been an interesting test on the eastern side of Howard County, and watched for the past three weeks because of showings of oil from 2,902-09 feet and 2,837-41 feet, is now shut down at 2,955 feet, making one-half barrel of water per hour from 2,949-55 feet. The well will probably be plugged back and shot to test the

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WILDCAT OPERATIONS IN WEST TEXAS

Week Ended June 24

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Mid-Continent Oil & Gas Co.'s No. 1 Fisher, 1,320 ft. N and 200 ft. E of SW cor. Sec. 5, Blk. A-36	Top salt 1,720 ft.; running 8¼-in. casing 3,355 ft.; drlg. 4,338 ft.
BORDEN COUNTY	
Moncrief et al's No. 1 Munger, C of SW Sec. 14, Blk. 31	Moving in material.
Texas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Rigging up.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F.	Underreaming at 1,930 ft.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,530 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 55 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 1,302 ft.
Johnson & Weekley's No. 1 Jackson & Harmon, C Sec. 104, Blk. 10, G.H.&S.A. Sur.	Drlg. 1,335 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
COKE COUNTY	
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Drlg. 2,850 ft.

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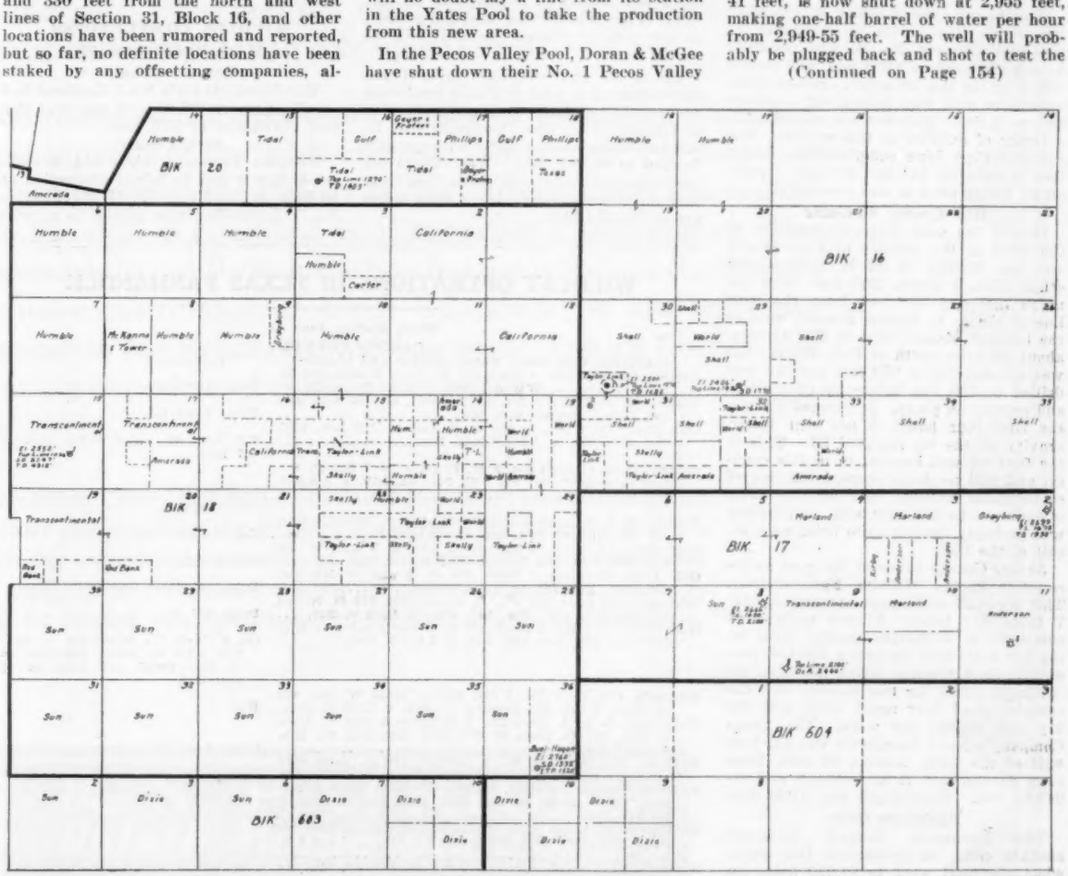

Plat showing new shallow pool discovery 18 miles west of the Yates Field, Pecos County. Taylor-Link Oil Co.'s No. 1 University is the promise or threat of a new pool of possible major production. Neighboring dry holes and drilling wells, with an offset location are also shown in relation to the discovery.

Promise of New Pool in Cooke County

Two and a Half Mile Extension of Bulcher Pool. Good Showing in Deepest Well Southeast of Electra, Wichita County

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 24.—The promise of a new pool in the shallow sand and a 2½-mile extension of the Bulcher Pool in Cooke County, with a good showing in the deepest well southeast of Electra in Wichita County, were the high lights in the Panhandle and North Texas districts during the week.

Benson Brothers and others' No. 1 Havercamp, 150 feet from the north and west lines of the Havercamp 105-acre tract in the H. N. Burditt Survey, Abstract 66, Cooke County, encountered sand from 754-61 feet, giving a fairly definite promise of a new pool in the shallow sand, for the well looks good now for about 30 bbls.

Fain-McGaha Oil Corp.'s No. 1 Huggins, 150 feet from the east line and 450 feet from the north line of the northeast corner of S.P.R.R. Survey, Abstract 982, has extended the Bulcher Pool in Cooke County, 2½ miles southeast, since encountering a good showing of oil from 1,181-89 feet. Pipe was set and the well is to be put on the pump. The last 14 hours' swabbing produced 151 bbls. of 40 gravity oil.

In Wichita County the outstanding feature was the showing of oil obtained in Gulf Production Co.'s No. 43-A Burnett in Section 4, H.&T.C. Survey, 2 miles southeast of Electra. Good sand was encountered from 3,616-20 feet and the well tested 1 bbl. per hour. It is now drilling at 3,790 feet. This is the deepest well in this part of the county, and much interest was displayed over the showing in the test.

Foard County Well

The Foard County strike of the Shell Petroleum Corp. in its No. 1 Tarver, in G.C.&S.F. Survey No. 3, was deepened during the week to 2,030 feet, and flowed 150 bbls. the last 24 hours. Before deepening the well was falling off considerably each day. This test has caused quite a flurry of activity in this section. The Sinclair Pipe Line completed its 4-inch line to the well, but had to make repairs on it shortly after it was completed.

Hill County Producer

One of the most interesting strikes of the week in the vicinity of Fort Worth was the finding of oil in Harper and others' No. 1 Jones, 300 feet from the north line and 250 feet from the west line of the A. C. Graves Survey, west of the town of Mount Calm in Hill County, about 85 miles south of Fort Worth. Oil was encountered at 692 feet and the well drilled to 700 feet before shutting down and putting on pump. It pumped 52 bbls. the first four hours, 5 per cent water, gravity of the oil reported 33. This is the first oil well brought in in this county, and will no doubt cause a shifting of considerable interest and activity from other areas to this new area, and leasing will probably become quite brisk as a result of the find.

Archer County is one of the most active counties in the Wichita Falls district. This week 22 wells were completed, only 7 being dry holes. Fifteen wells were completed in Wilbarger County, three being dry holes and the best a 230-bbl. producer. Jack County, which has been exceedingly active for two months, saw the completion of four small wells and one dry hole during the week. The Texas Company's No. 1 Daugherty was the best well of the week, making 82 bbls. from pays encountered from 3,038-45 and 3,045-69 feet. Total depth was 3,069 feet.

Panhandle Gain

The Panhandle district witnessed another climb in production this week, when the total went to 91,010 bbls., an increase of 4,605 bbls. over the previous week. Most of this gain was caused by Gray County production soaring to 55,500 bbls., with a small gain in Hutchinson County.

The Wichita Falls district also gained 1,050 bbls., with the Ranger district gaining the least of the three, with only 330 bbls. over the previous week. Total increase of these three districts was 5,985 bbls., all of it being high gravity sweet crude, commanding a fine price under the recent postings.

Hoffer Oil Corp. and others' No. 1 Gray, in the NE Section 485, S.P.R.R. Survey, Eastland County, which came in during the past week, gained in production this week, flowing around 1,000 bbls. daily from a total depth of 3,457 feet. Top of the Lake sand was 3,446-57 feet. This is the best well in this district from the Lake sand, and will no doubt have considerable bearing on deeper drilling in this area testing for this pay horizon. The well is 5 miles north of Cisco.

Dyer Pool

There is a possibility of the Dyer Pool, a shallow producing pool of Shackelford County being extended approximately 3 miles south, for Campbell & Co.'s No. 1 Jackson, wildcat test, about 8 miles north of Baird, encountered a showing of oil and gas at 920 feet in sand. This company is also drilling several other tests over the county, but this test is their most likely looking bet at present in Callahan. It is located 1,320 feet south and 150 feet west of the NE cor., Section 21, B.B.B.&C. Survey. The Dyer Pool is a shallow pool where production runs as high as 100 bbls. The Cook sand is the pay horizon in this pool, and Campbell's test picked up the showing in this sand. Pipe is now being run, and as soon as the hole is cleaned the well will be tested.

Up to the first of June North Texas had completed a total of 22,125 producing wells, with a daily average production of 134,539 bbls. The Panhandle had 1,580 producers with a daily average production of 67,481 bbls. West Texas led the other two districts in production from only 2,279 wells, producing a daily average of 351,314 bbls.

ESTIMATED DAILY AVERAGE PRODUCTION
June 22

NORTH TEXAS

Panhandle district—	
Carson County	7,325
Hutchinson County	26,215
Gray County	55,500
Moore County	1,215
Potter County	25
Wheeler County	730
Total this week	91,010
Total last week	86,405
Increase	4,605
Wichita Falls district—	
Archer County	18,311
Baylor County	82
Clay County	637
Cooke County	6,406
Foard County	144
Jack County	2,997
Haskell County	150
Montague County	6,592
Throckmorton County	713
Wilbarger County	26,501
Young County	7,019
Wichita County	26,283
Total this week	95,826
Total last week	94,776
Increase	1,050
Ranger district—	
Brown County	7,780
Callahan County	4,530
Coleman County	3,928
Comanche County	1,199
Palo Pinto County	357
Ranger	5,442
Shackelford County	11,971
Stephens County	6,275
Total this week	41,482
Total last week	41,152
Increase	330
Grand total this week	228,318
Grand total last week	222,333
Increase	5,985

WICHITA COMPLETIONS

Week Ended June 22

Grayson County

Murchison Oil Co's No. 1 Guilland had an oil show at 731-38 feet and was dry and abandoned at 976 feet.

Jack County

Buttram Petroleum Co.'s No. 3 Cullers & Sporer had an initial production of 16 bbls. at 2,042 feet. F. H. E. Oil Co.'s No. 1 Leffel-Box was drilled to a total depth of 3,188 feet, topped the pay at 2,991-3,003 feet and at 3,061-68 feet and had an initial production of 70 bbls. Lydecker Oil & Gas Co.'s No. 1 Box was dry and abandoned at 3,390 feet. Shaw's No. 1 Box topped the pay at 3,073-86 feet, at 3,189-95 feet and at 3,195-3,201 feet, was drilled to a total depth of 3,201 feet and had an initial production of 78 bbls. The Texas Company's No. 1 Daugherty had an initial production of 82 bbls. at 3,038-45 feet and at 3,045-69 feet.

Archer County

Archer Drilling Co.'s No. 3 Thompson was dry and abandoned at 1,645 feet. Brown & United Production Co.'s No. 2 Taylor had an initial production of 30 bbls. oil and 6 bbls. water at 1,636-41 feet. Their No. 3 Taylor had an initial production of 212 bbls. at 1,473-78 feet and was drilled to a total depth of 1,485 feet. Burns' No. 1 McCrary had an initial production of 35 bbls. at 1,219-1,250 feet. Fain-McGaha Oil Corp.'s No. 3 Taylor had an initial production of 205 bbls. at 1,477-1,483 feet. Its No. 1-B Taylor was abandoned at 1,666 feet. Kemrow Production Co.'s No. 5 Campbell was dry and abandoned at 1,825 feet. Massie's No. 7 Wilson had an initial production of 15 bbls. at 1,573-93 feet. George Pace's No. 1 Riggs was dry and abandoned at 2,004 feet. The location was abandoned on Pandem Oil Corp.'s No. 4 Wallace. Payne and others' No. 4 Parrish had an initial production of 24 bbls. oil, 5 bbls. water at 1,396-1,404 feet. Shappell Oil Co.'s No. 6 Lyles was bailed dry at 1,701 feet. Sheldon's No. 2 Chilson had an initial production of 7 bbls. at 1,777-79½ feet. Coleman's No. 1 Longley was dry and abandoned at 1,350 feet. Continental Oil Co.'s No. 4 Richardson had an initial production of 65 bbls. at 1,164-69 feet. Humble Oil & Refining Co.'s No. 3 Kunkel had an initial production of 215 bbls. at 1,183-85 feet. Humble Oil & Refining Co. and Fain-McGaha Oil Corp.'s No. 8 Logan had an initial production of 34½ bbls. at 1,103-18 feet.

Hunter and others' No. 1 Bishop was dry and abandoned at 1,505 feet. Moran Drilling Co. & Prairie Oil & Gas Co.'s No. 1 Richardson was dry and abandoned at 1,161 feet. Prairie Oil & Gas Co.'s No. 3 Richardson had an initial production of 212 bbls. at 1,159-68 feet. W. H. Smith, Jr., No. 4 Prideaux had an initial production of 8 bbls. oil, 2 bbls. water, at 734-45 feet.

Clay County

American Refining Properties' No. 4 fee had an initial production of 4 bbls. at 892-934 feet. Mid-Continent Holding Co.'s No. 1 Stine and others was dry and abandoned at 1,840 feet.

Cooke County

Humble Oil & Refining Co.'s No. 2 Poteet had an initial production of 168 bbls. at 1,360-80 feet. Kewanee Oil & Gas Co.'s No. 1 Hair was dry and abandoned at 1,668 feet.

Haskell County

Barnes' No. 1 Pierson was dry and abandoned at 1,552 feet. Superior Oil Corp.'s No. 5 Reynolds was dry and abandoned at 1,740 feet.

Throckmorton County

Bearman's No. 2 Ledbetter had an initial production of 10 bbls. at 780-84 feet. His No. 1 Tuton had an initial production of 10 bbls. at 770-78 feet.

Young County

Clarida & Bratcher's No. 1 Johnson was dry and abandoned at 730 feet. Shinola Oil Co.'s No. 2 Haygood was dry and abandoned at 730 feet. Wise & Jackson's No. 9 Calvin made 6 bbls. at

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending June 24

CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Delmar Oil Co.'s No. 4 Nail, 330 ft. from N line, 330 ft. from W line of W½ SE, Sec. 198, I.&G.N., Blk. 3	Drlg. 2,375 ft.
Empire G. & F. Co.'s No. 16 Burnett, C NW cor. Sec. 104, Blk. 5, I.&G.N.R.R. Sur.	Drlg. 2,360 ft.
Gulf Prod. Co.'s No. 1, 330 ft. S and W NE cor. NW, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	S.D. 3,117 ft; swbd. 177½ bbls. in 7 hrs.
Empire G. & F. Co.'s No. 5 M. P. Co.'s "A," 330 ft. S and E of NW cor. SE SW, Sec. 91, Blk. 4, I.&G.N. Sur.	Drlg. 2,865 ft; first gas 2,650 ft; 7,000,000 ft.
Empire G. & F. Co.'s No. 1 Deahl, 660 ft. from N line, 660 ft. from W line, Sec. 21, Blk. Y-2	U.R. at 1,005 ft.
Gulf Prod. Co.'s No. 1 Garner-B, 330 ft. N and W SE cor. SW, Sec. 106, Blk. 4, I.&G.N.R.R. Sur.	Rigging up.
Gulf Prod. Co.'s No. 7 Noel, 330 ft. S and W NE cor. SW, Sec. 198, Blk. 3, I.&G.N. Sur.	Drlg. 305 ft.
Herragan Oil Co.'s No. 1 L. C. McConnell, 330 ft. N and W line W½ SW, Sec. 187, Blk. 3, I.&G.N. Sur.	Drlg. 875 ft.
Gulf Prod. Co.'s No. 6 Noel, 330 ft. S and 1,320 feet E of NW cor. SW, Sec. 198, Blk. 3, I.&G.N. Sur.	Oil 3,170-75 ft; 58,000,000 ft. gas; T.D. 3,248 ft; swbd. 250 bbls. in 18 hrs; swbd. 210 bbls. in 15 hrs; C.O.
Magnolia Pet. Co.'s No. 7 fee, 990 ft. from W line, 890 ft. from S line SE, Section 91, Blk. 4, I.&G.N. Sur.	Rig.
McConnell O. & G. Co.'s No. 1 McConnell, 330 ft. from N line, 330 ft. from E line W½ NE, Sec. 65, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 2,720 ft.
Midwest Explth. Co.'s No. 1 Cooper, 330 ft. each way from SE cor. W½ NW, Sec. 5, Blk. 9, H.&G.N. Sur.	Drlg. 2,515 ft.
Midwest Explth. Co.'s No. 2 Cooper, 990 ft. from S line and 330 ft. from W line W½ NW, Sec. 5, Blk. 9, I.&G.N. Sur.	Drlg. 720 ft.
Midwest Explth. Co.'s No. 3 Cooper, 990 ft. S and 330 ft. E NW cor. W½ NW, Sec. 5, Blk. 9, I.&G.N.R. R. Sur.	Location.
Morris et als' No. 1 Barnard, NW cor. SW SE, Sec. 44	2,000,000 ft. gas 2,752-62 ft; drlg. 3,280 ft; show oil.
Ryan Oil Co.'s No. 3 Black, 990 ft. from S line, 330 ft. from E line NE, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 720 ft.

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R. S. PATRICK
Duluth, Minnesota, U.S.A.
Cable Address, "Exploring" Duluth

Pipe Line Construction News

STERLINGTON STATION ONE OF THE LARGEST

SHREVEPORT, La., June 24.—Construction of a natural gas compressor station near Sterlington, La., eventually to become one of the largest in the world, to feed the new 20-inch pipe line to Shreveport, is now under way by the Arkansas-Louisiana Pipe Line Co., a subsidiary of the Arkansas Natural Gas Corp., W. H. Buckley, general superintendent of the gas division, announced.

The station will cost upwards of $1,000,000 and will be the largest in the South with a horsepower of 10,000 at the completion of the first project. A second addition to the plant will add 6,000 horsepower and increase it to one of the largest in the world, Buckley said.

A 20-inch gas line is being laid from the Monroe gas fields to supply the Shreveport area in the event the city's present supply is depleted during the winter months. The new line will be of sufficient size to supply Shreveport homes and industries for at least 20 years. The line is more than 100 miles in length and will cost several million dollars.

The Arkansas-Louisiana Pipe Line Co. is also laying a 16-inch pipe line from Monroe to El Dorado, Buckley announced. The Republic Construction Co. has the contract for the gas compressor and has already laid the foundation, it was said. J. C. Ferguson, vice president of the Republic company, is supervisor of the project.

CONSIDER 500-MILE LINE TO WINNIPEG

The Imperial Oil Co., a subsidiary of the Standard Oil Co. of New Jersey, has under consideration a project to pipe gas from the Turner Valley to cities in southern Saskatchewan and as far east as Winnipeg, Manitoba, through a system of pipe lines more than 500 miles in length.

Millions of cubic feet of gas are going to waste in Turner Valley every year. During 1928 the output of the field came to about 12,000,000,000 feet, and the bulk of this was wasted. The project to pipe some of this output to cities which would provide a market is not new, having been discussed several times in the past. The strong backing which the plan has in the present case, leads to expectations it will be carried through.

LINE TO DIXIE POOL

SHREVEPORT, La., June 24.—Dixie Oil Co. has completed a 4-inch line into the new Dixie Pool, 12 miles north of Shreveport, and will run Ohio Oil Co.'s production from the well the latter has been waiting to bring in until the line is available and succeeding completions. Dixie leased a 4-inch line from the Magnolia Petroleum Co. which extends past the new pool to the Pine Island district which has been idle for some time and built 1¼ miles of new line of the same size. At Hosston the oil will be delivered to a 6-inch line the Dixie built some time ago to supply its refinery at Superior.

FARMINGTON GAS LINE

The town board of Farmington, N. Mex., is negotiating with the Hope Engineering Co. for a gas franchise, the franchise given to Howard L. Bean and associates, having expired without the firm constructing a proposed line from the Kutz Canon district to Farmington. The Hope company is completing and about ready to put into operation its new line from the Ute structure in northern San Juan County, to Durango, in Colorado, the distributing company being the Durango Natural Gas Co.

UINTA PIPE LINE PROGRESS

DENVER, Colo., June 22.—Construction work has been progressing satisfactorily on the Uinta Pipe Line Co.'s gas line from southern Wyoming to Salt Lake City, Utah. All of the 16-inch and the 14-inch pipe is strung, and half of the 18-inch. There are about 1,800 men working in the six different camps.

The 16-inch line between Salt Lake and Coalville is about 70 per cent completed; the 14-inch pipe line between Ogden and Coalville is 45 per cent completed, and the 18-inch line between Coalville and Green River is about 15 per cent completed. Good weather will permit gas to reach consumers in Salt Lake City and Ogden by August 1. Distribution lines in both these towns are making progress and it is said the companies will have it ready for the gas when it is delivered to Border Station.

Work of distributing pipe for the Evanston, Wyo., system has been started and trenching operations have been under way for several days. The branch line to Evanston will leave the main pipe line near Old Hilliard, about 16 miles southwest of Evanston.

GAS LINE TO ST. LOUIS 20 PER CENT COMPLETED

The 475-mile pipe line now under construction from the Monroe-Richland natural gas fields in northern Louisiana to St. Louis industrial district is approximately 20 per cent completed. The line, which will be the second largest main line unit in the country, and will cost about $30,000,000, is being laid by the Mississippi River Fuel Corp., a syndicate comprising Standard Oil of New Jersey, United Gas Co., Electric Bond & Share, Columbian Carbon Co. and United Carbon Co.

On June 14 over 59 miles of this 22-inch line had been laid and back filled, while 134 miles of pipe had been unloaded. Up to June 21 the pipe actually laid had been further extended and unloaded pipe ready for the six construction gangs was sufficient for 168 miles.

Construction was started with the clearing of the right of way about six weeks ago. During that period work was hampered in several sections by high water but has proceeded at a faster rate than originally expected. The line will be finished and tested by November 1, it is estimated, some weeks earlier than the engineers had previously announced.

LINE FROM JENNINGS FIELD

HOUSTON, Tex., June 22.—Surveys have been made by the Standard Pipe Line Co. for the laying of a small line from the Jennings Field of Acadia Parish, Louisiana, to loading racks at Egan, a distance of approximately 6 miles. From Egan the oil will be shipped in tank cars to the Standard Oil Co.'s refinery at Baton Rouge.

Although Jennings is one of the oldest coastal fields and has yielded some of the most prolific producers, no trunk lines have ever been laid from the field and at present the only outlet is a small line of the Gulf Refining Co. from the field to the loading racks at Jennings.

KETTLEMAN HILLS LINE

SAN FRANCISCO, Calif., June 22.—Standard Oil Co. of California is surveying a route for a 10-inch pipe line from Kettleman Hills to tidewater. The Kettleman Hills terminal has not been decided upon, but the tidewater terminal will probably be Port San Luis where Union Oil also has terminal facilities. The proposed line would be approximately 70 miles long.

MONTERREY CONTRACT HAS BEEN AWARDED

HOUSTON, Tex., June 24.—Immediate linking of the Southwest Texas gas fields with Monterrey, Mexico's greatest industrial center, with a gas line was assured the past week when the United Gas Co. of this city let the contract for laying the line to Smith Brothers Construction Co. of Dallas, Tex.

Pipe already has been ordered from Youngstown Sheet & Tube Co. of Youngstown, Ohio, and this will start moving within a few days. The length of the line will be 125 miles and the entire right of way has been obtained after considerable delay due to Mexican laws. The line, which will start in the Jennings Field, Zapata County, will cross the Rio Grande River at Roma.

In accordance with Mexican law, the Mexican end of the line will be operated by the newly organized subsidiary of the United Gas Co., the Compania Mexicana de Gas, which will transport and sell the Texas gas to a local distributing company at Monterrey.

This line will cross the Rio Grande at Roma, Tex., and proceed on an almost air line to Monterrey.

NEW FRACTIONATING TOWERS

LOS ANGELES, Calif., June 22.—Improvements, consisting of new condensers and cooling sections, as well as fractionating towers and gas liners, at a total cost of $16,000, have just been completed upon the Long Beach refinery of the Macmillan Petroleum Corp., according to H. E. Bonor, general superintendent.

The fractionating towers, original with Macmillan Petroleum, were designed by Bonor and are credited with a percentage of increase in gasoline extraction. The same type of towers have also been installed in the Borger, Tex., and El Dorado, Ark., refineries of the corporation.

KETTLEMAN HILLS PLANT

LOS ANGELES, Calif., June 22.—The Shell Oil Co. has broken ground for its new absorption plant, to be situated on the north dome, at Kettleman Hills. The plant will care for the gas from any of Shell's possible completions in that area, and will be on Section 8-22-18, where traps are said to be under construction to care for any output.

GULF LINE FROM MIDLAND

HOUSTON, Tex., June 24.—Gulf Pipe Line Co.'s West Texas line from Midland to Port Arthur, approximately 450 miles of 8, 10 and 12-inch which is being constructed in five sections, is 50 per cent completed. It is expected to be in operation by August 15.

This new line will increase Gulf's pipe line capacity from West Texas to the Coast to 50,000 bbls. daily from 25,000. Of this amount, 5,000 bbls. will be dropped off at Sweetwater to supply crude for the Gulf's refinery. The increased capacity will give some relief to the Gulf's pipe line system, as the company has more production than its pipe line system can take care of.

NEW PIPE LINE WORK

The Texas Company is getting ready to lay a 10-inch pipe line from Bulcher, Tex., to its station at Marsden, Okla., a distance of about 20 miles, including a river crossing. Cosden Pipe Line Co. is laying a 6-inch welded pipe line from Mounds in Creek County, Oklahoma, to its station at Seminole to connect its main line which runs from Seminole to Drumright then to its refinery at West Tulsa.

SOUTHWEST TEXAS WORK

SAN ANTONIO, Tex., June 22.—F. H. Carson, who has the contract for construction work on four pipe lines now building in Southwest Texas, has completely cleared 200 miles of right of way for the Magnolia Gas Co.'s gas line from the Mirando Field to San Antonio and several miles of the pipe has been laid and the ditch backfilled. Five miles of the field line for the Gulf Coast Pipe Line Co.'s 6-inch oil line from the Refugio Field to Corpus Christi has been laid and the ditch backfilled. One of the 55,000-bbl. tanks for the tank farm south of Refugio for this line has been completed and the second 55,000-bbl. tank is nearly completed. Some 20 miles of line for the United Gas Co.'s gas line at Kenedy and Yorktown has been laid and the ditch backfilled. Considerable work done on the Southern Gas Utilities' lines in the new Randolph flying field at San Antonio has been completed. Gas for the towns of Kenedy, Yorktown, Randolph flying fields and several towns between San Antonio and Refugio will be supplied by the United Gas Co.'s line from Refugio to San Antonio and considerable work on it has already been completed. Magnolia Gas Co. will build a compressor station at Beeville for its gas line from Mirando to San Antonio, site for the compressor station having been purchased.

MONTANA GAS PROJECT

CASPER, Wyo., June 22.—The Davis Engineering Co. is looking over the natural gas situation in Shelby and vicinity, but no statement has been made as to what end is in view. The firm is represented by E. A. Stephenson of Pittsburgh, Pa., and Paul Reneeman of Tulsa.

Ismay, a small town near the line of the Dakota-Montana Power Co., between the Glendive Field and Miles City, will vote whether it will have natural gas. The Dakota-Montana Power Co. has agreed to take over the town's electric system and in case the town votes to accept the proposition, a branch line to furnish natural gas will be laid this summer, ready to operate by fall.

PROSPECTIVE GAS LINES

LOS ANGELES, Calif., June 22.—Application for a franchise covering the transportation and sale of natural gas in San Diego County has been made to the board of supervisors by the Southern California Gas Co., A. B. Macbeth, president of the company, stated. Application has also been made to the California Railroad Commission for a certificate of public convenience and necessity to operate under such a franchise.

The company now is negotiating with the San Diego Consolidated Gas & Electric Co. to supply gas at the city limits of La Jolla for distribution in that town and San Diego, according to Mr. Macbeth.

A pipe line from Huntington Beach to La Jolla is contemplated, and it is probable that natural gas will be supplied to various communities along the line.

FILES PIPE LINE DEEDS

SAN LUIS OBISPO, June 22.—The Standard Oil Co. of California has filed the first right of way deeds for an oil pipe line from the Kettleman Hills Field to a San Luis Obispo County port. The line will follow the Cottonwood pass route from Kern County and terminate at tidewater. Surveyors are studying Port San Luis, the present terminus of the Union Oil Co.'s pipe line, and Cayucos, on the north country coast, for possible terminal sites.

SEMINOLE HOIST
"HEAVY DUTY"

2 SPEEDS FORWARD—2 SPEEDS REVERSE
This hoist when used with the McCormick Deering Tractor equipped with Trackson Full Crawlers easily adapts itself to all classes of heavy duty hoist work.

With its load capacity of 25,000 lbs. on a single line, the SEMINOLE fills many requirements in the oil fields and on pipe line construction.

SEMINOLE PIPE HANDLING BOOM

This Boom and Boom Hoist are entirely supported by the crawler frame and axles.

THIS NEW FEATURE in a Tractor Boom relieves the tractor motor of all stresses which it is subjected to from other types of boom construction. The unit handles easily 4,000 lbs. without stiff leg or 25,000 lbs. with stiff leg.

Automotive Division

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OKLAHOMA FIELDS

(Continued from Page 52)

tinent's Smith lease, which is making 8,600 bbls. a day.

In the Misener sand pool north of Maud, Wilcox Oil & Gas Co.'s No. 4 Smith, NW NE SE Section 8-8-5 has the Misener sand at 4,048-68 feet, and the Hunton at 4,068-4,100 feet. From both sands it flowed 2,025 bbls. in 24 hours.

Mid-Continent Petroleum Corp. has another good well in the Earlsboro Pool in its No. 3 Rogers, SE SW SW Section 5-9-5, Seminole County. It had Wilcox sand at 4,309-28 feet and flowed 1,615 bbls. in 24 hours. This is a northwest extension to the Earlsboro Pool. On the strength of this well the Empire Oil & Refining Co. will drill a test in the SE cor. of Section 6-9-5, its No. 1 Keys.

East Seminole Increasing

There are six producing wells in the new East Seminole Pool in 18-9-6 and more are expected. The recent well of the Magnolia Petroleum Corp., No. 1 D. W. Anderson, SW SE NE Section 18-9-6, Seminole County, is on air and made 2,376 bbls. after a shot. The Gypsy Oil Co.'s No. 1 Payne, NW SE SE 18-9-6, made 417 bbls. in 17 hours from the Wilcox sand at 4,269-78 feet. Magnolia Petroleum Corp.'s Nos. 1, 2 and 3 Anderson, Section 18-9-6, made 1,317 bbls. on gauge of June 21 and will be put on air lift. The Prairie Oil & Gas Co.'s No. 1 Raitman, SE NW NW Section 18-9-6, has been put on air lift and produced 4,465 bbls. the first 24 hours.

St. Louis-Asher Runs

The daily average pipe line runs from the St. Louis Field and the runs from Asher Field are as follows:

Company—	Bbls.
Independent	4,842
Consolidated	3,021
Magnolia	26,981
Prairie	22,895
Oklahoma	1,287
Cosden	768
Tidal	4,225
Gulf	4,784
Texas	1,793
Sinclair	28,509
Shell	3,145
Total	102,250

Several companies are drawing on stocks in the Seminole area at the rate of approximately 5,000 bbls. a day.

Seminole Runs

The daily average pipe lines runs from the Seminole area for the past week are as follows:

Company—	Bbls.
Barnsdall	8,102
Champlin	5,684
Continental	1,382
Consolidated	263
Cosden	8,967
Empire	9,221
Gulf	35,571
Magnolia	19,872
Oklahoma	39,126
Prairie	52,776
Producers & Refiners	728
Pure	2,631
Shaffer	3,387
Shell	16,888
Sinclair	36,337
Texas	14,880
Tidal	18,775
White Oak	3,847
Total	278,437
Tank Cars	7,971
Grand total	286,408

Geophysicists in Southern Area

In the southwestern part of the State a location has been made in the NW SW SW, Section 29-4s-11w, Cotton County, on a large block of leases for a test to be drilled 3,500 feet by unnamed parties. More blocks are being assembled in Townships 6s-7w and 6s-6w, Jefferson County, and there is a leasing play in Township 2n-7w in Stephens County, and in Township 3n-7w, Grady County.

At least six geological parties are working in Jefferson, Cotton, Stephens, and Grady Counties, while three torsion balance parties, are at work in and around Townships 6s-5w and 5s-5w, in Marshall and Tillman Counties.

Beckham County

E. L. Martin's No. 1 Porch, SE cor. NW NW, Section 27-9-23w, has been completed for 68,000,000 feet of gas at 2,700 feet.

Carter County

Ven Mex Oil Co.'s No. 1 See, SE cor. SW SE, Section 23-1s-3w, is rigging up.

RECAPITULATION SHEET JUNE 20, 1929

Company	Little River	Carr	Maud	Mission	Bowlegs	Earlsboro	Seminole	East Seminole	Searight	Total
Amerada	1,055	....	2,920	1,120	780	1,212	904	....	302	8,293
Atlantic	....	....	....	....	967	105	485	....	....	1,557
Barnsdall	1,481	2,938	....	....	356	6,134	1,141	20	25	12,095
Blackwell	2,290	....	....	....	....	....	....	....	....	2,290
Bryan-Emery & Carter	13	....	....	....	....	....	....	....	....	13
Burke-Greis	....	....	....	....	....	1,930	....	....	....	1,930
Carter	9,749	1,790	....	1,845	3,269	3,140	6,743	....	4,673	31,209
Champlin	1,010	....	....	....	....	....	....	....	....	1,010
Continental	1,747	....	....	....	....	682	....	1,871	....	4,300
Cosden & Co.	....	....	....	....	....	1,740	....	....	....	1,740
Darby	....	....	6	70	....	....	....	....	....	76
Dixie	....	....	....	....	40	....	....	....	....	40
Empire	848	4,495	1,000	....	362	1,664	365	....	....	8,734
Gypsy	13,603	65	819	9,332	2,695	8,417	2,317	446	1,148	38,842
Independent	5,431	....	240	3,908	....	1,764	2,028	....	....	13,421
I. T. I. O.	2,980	27	113	....	7,960	....	2,328	....	....	13,408
King-Shell	....	....	....	....	....	....	408	....	....	408
Laurel	....	....	227	....	....	....	....	....	....	227
McCullough	1	....	....	....	119	....	....	....	....	120
Magnolia	1,200	497	313	....	1,938	7,344	144	11	912	12,359
Marland-Shaffer	300	....	....	....	....	....	....	....	....	300
Marland-Shell	....	....	132	....	....	....	....	....	....	132
Marland	....	....	....	1,135	....	....	....	880	....	2,015
McMahon	....	....	....	918	....	....	....	....	....	918
Mid-Continent	9,010	....	20	60	554	3,007	625	....	1,575	14,848
Mid-Kansas	....	....	....	5	....	35	....	....	....	40
Minnehoma	....	....	....	897	28	....	....	....	....	925
Pine	1,705	....	511	1,117	....	....	....	....	14	3,347
Pine-Phillips	148	....	....	....	....	....	....	....	....	148
Phillips	....	....	410	....	....	740	90	....	....	1,240
Prairie	7,980	1,925	205	2,105	4,287	8,492	4,886	....	84	29,964
Prairie-Slick	1,175	....	....	275	....	....	....	....	....	1,450
Pure	4,256	....	1,736	....	4,967	....	5,725	....	825	17,509
Reiter-Foster	647	....	....	....	....	....	....	....	....	647
Shaffer	145	....	....	1,250	407	210	....	18	....	2,030
Shell	2,224	....	....	....	45	1,645	250	....	204	4,368
Shell-Marland	....	....	....	504	....	....	....	....	....	504
Shell-Papoose	....	....	....	1,753	....	....	....	....	....	1,753
Sinclair	2,777	1,364	1,053	1,369	4,549	2,820	2,354	2,145	1,495	19,926
Skelly	1,521	....	389	....	....	2,220	....	....	....	4,130
Skelly-Atlantic	....	....	....	....	....	2,034	....	....	....	2,034
Skelly-Margay	....	....	0	....	....	....	....	....	....	0
Snowden-McSweeney	489	....	....	....	....	....	....	....	....	489
Superior	2	....	....	....	....	2,544	136	....	....	2,682
Texas	1,362	....	270	....	700	1,785	155	....	20	4,292
Texas-Indep.	1,787	....	....	....	....	....	....	....	....	1,787
Tidal	442	....	295	1,935	1,225	3,560	1,642	....	....	9,100
Turman	....	....	....	....	....	....	1,576	....	....	1,576
Twin State	70	....	150	3,945	....	92	....	....	70	4,327
Wilcox	....	....	2,104	....	....	....	....	....	194	2,298
Total prod.	77,498	13,101	12,913	33,543	35,248	63,316	34,303	5,391	11,538	286,857
Total wells	339	44	120	115	303	305	274	13	74	1,587

Cotton Belt Oil Co.'s No. 9-C Rexroat, NE cor. NW NE SW, Section 10-4s-2w, is drilling at 50 feet. Magnolia Petroleum Co.'s No. 2 Putman, NE cor. SW, Section 30-1s-3w, made 187 bbls. in sand at 2,745-62 feet.

Cotton County

Moore and others' No. 3 Chambers, SE cor. NW, Section 2-2s-10w, is drilling at 1,640 feet. Silurian Oil Co.'s No. 2-P Chambers, SW cor. NE NW, Section 2-2s10w, is rigging up. Clifford Moore's No. 3 Moore, SE cor. NE NE SW, Section 2-2s-10w, is flowing 115 bbls. from sand at 2,174-2,200 feet.

Creek County

William Sherry and others' No. 1 Welch, NW cor. SW, Section 24-19-9, is spudding. O. M. Irelan and others' No. 1-A Jones, CWL NE SW, Section 11-17-10, is drilling at 1,550 feet. Jack Murphy and others' No. 1 Harjo, SW cor. NE SW, Section 12-17-11, is spudding. Bryan Petroleum Co. and others' rig is up for No. 2 Jackson, NE cor. NW SW, Section 8-16-11. Billingslea and Riverland Oil Co.'s No. 1 Deere, NE cor. SW NE, Section 28-14-10, is drilling at 2,365 feet.

Silurian Oil Co. and Houston Oil Co.'s No. 2 Anthis, SE cor. SW SE, Section 6-19-7, made 90 bbls. from sand at 3,143-58 feet. Murphy Oil Co.'s No. 1 Lapham, SW cor. NE SW, Section 35-19-8, is dry and abandoned at 3,245 feet. William Sherry and others' No. 1 Barnett, NE cor. SW, Section 20-18-10, has been abandoned at 3,038 feet. W. S. O'Hair and others' No. 1 Ralston, SE cor. Section 32-18-10, is dry and abandoned at 3,468 feet. O. M. Irelan and others' No. 1-A Smith, CEL SW SE, Section 11-17-10, has been completed for 12 bbls. in sand at 1,925-37 feet.

Ted Ray and others' No. 3 Smiles, CNL NE NE, Section 13-17-10, made 2,500,000 feet of gas at 2,254-86 feet, after plugging back from 2,498 feet. Roxaline Oil Co.'s No. 1 Chamberlain, C SE SE, Section 28-17-12, has been completed for 3,000,000 feet of gas in sand at 1,778-93 feet. Tom Slick Oil Co. and others' No. 1 Cress, NW cor. SE, Section 16-16-10, is a dry hole at 3,333 feet. Atlantic Oil Producing Co.'s No. 2 Scott, SW cor. NE NW, Section 23-14-10, has been abandoned at 3,275 feet.

Dewey County

Huckelby & McCoy's No. 1 Perfect, NE cor. Section 9-18-15w, is dry and abandoned at 4,506 feet.

Grant County

Champlin Oil & Refining Co.'s No. 1 fee, SE cor. NE SE, Section 15-27-3w, has been abandoned at 4,315 feet.

Jefferson County

Beck & Lapham's No. 4 Seay, NE cor. SE SW, Section 34-6s-5w, is rigging up. Sigler & McGinley's No. 1 Jones, SE cor. SW NW, Section 16-7s-5w, is drilling at 600 feet. O. V. Beck's No. 3 Seay, SW cor. SE, Section 34-6s-5w, swabbed 200 bbls. from sand at 1,176-1,201 feet. Cox & Robinson's No. 1 Seay, SE cor. NE SW, Section 34-6s-5w, was completed for 70 bbls. in sand at 1,565-67 feet.

Kay County

Harris & Haun's No. 3 School land, SE cor. SW NW NE, Section 36-28-1w, has been abandoned at 835 feet. Wilson and others' No. 1 Courter, SE cor. Section 23-27-1, was completed for 250,000 feet of gas in sand at 845-50 feet.

Kingfisher County

Galt Brown Oil Co.'s No. 1 Jones, C NW SE, Section 6-16-17w, is an old well drilling deeper at 5,195 feet.

Kiowa County

Alexander and others' No. 1 Dittmar, SE cor. SW SW SE, Section 18-6-16w, is drilling at 250 feet.

Logan County

Shell Petroleum Corp.'s No. 5 Sebranek, NW cor. SE NE, Section 30-19-4w, Roxana Pool, has been completed for 1,447 bbls. in Wilcox sand at 6,045 feet.

Marshall County

William Hewitt and others moved a machine to the location for No. 1 Woody, SW cor. NW SE, Section 6-6s-5.

Okfuskee County

C. L. McMahon and J. Carey's No. 2 Sproleder, SE cor. SW SE, Section 29-12-10, is a rig on the ground. Milmac Oil Co.'s rig is up for No. 1-A Bullett, SE cor. SW NE, Section 27-12-12. Champlin Oil & Refining Co. has the rig up for No. 3 A. Jefferson, SW cor. Section 14-11-11. Hazlett and others' No. 1 Johnson, NE cor. SE NE, Section 3-10-11, is rigging up. Vierson & Walters made location for No. 1 Barnett, C NW NE, Section 4-10-11. Location was also made for No. 1 S. Barnett, NW cor. NE, Section 9-10-11.

Minnehoma Oil Co.'s No. 1 Fixico, NW cor. SW SE, Section 29-12-10, has been completed for 200 bbls. in sands at 2,910-42 feet and 3,108-52 feet. The Prairie Oil & Gas Co.'s No. 2 Miracle, SE cor. SW, Section 29-12-10, has been completed for 18,000,000 feet of gas in sand at 3,120-42 feet. E. L. Robinson and others' No. 4 S. Severs, SW cor. NW SE, Section 35-11-9, made a 12-bbl. well in sand at 1,469-75 feet. Kingwood Oil Co. and Umburn's No. 2 Simmer, NW cor. NE SW, Section 2-10-11, has been abandoned at 1,800 feet.

Okmulgee County

American Maracaibo Oil Co.'s No. 1 Smith, NE cor. SW, Section 17-13-11, has been abandoned at 3,225 feet. Wier & Cramer's No. 3 Hawkins, SW cor. NW SE, Section 4-11-12, made 20 bbls. in sand at 1,514-60 feet.

Osage County

Osage Gas Producers Co.'s No. 1, SW cor. Section 29-28-11, is drilling at 140 feet for gas. Peters Petroleum Co. and Producers & Refiners Corp.'s No. 1, SE cor. SW, Section 22-27-11, is drilling at 890 feet. Peters Petroleum Co. has the rig up and tools in for No. 5, SW cor. SE SE, Section 22-27-11. Indian Territory Illuminating Oil Co. has a machine at the location for No. 410, SE cor. SW SW NW, Section 8-24-9.

Indian Territory Illuminating Oil Co.'s No. 1, NW cor. SE, Section 16-28-8, made 10 bbls. in sand at 2,358-85 feet. Lewis Production Co. and others' No. 4, NE cor. SE SE, Section 15-26-6, has been completed for 327 bbls. in sand at 2,955-93 feet. Indian Territory Illuminating Oil Co.'s No. 3, NE cor. NW SW, Section 28-23-9, made 2 bbls. in sand at 330-46 feet. J. H. Craig's No. 5, SW cor. NW NE, Section 8-22-11, is a 10-bbl. well in Burgess sand at 1,864-99 feet.

Barnsdall Oil Co. and Branstetter's No. 3, NE cor. SW NE SE, Section 22-22-11, made a 15-bbl. well in Bartlesville sand at 1,654-1,701 feet. Devonian Oil Co.'s No. 2 Copeland, NW cor. SE SW, Section 26-20-9, is making 30 bbls. in sand at 2,050-80 feet. Oklahoma Power & Water Co.'s No. 119, SE cor. SW SW, Section 4-20-10, has been completed for 4,000,000 feet of gas in sand at 1,664-79 feet.

Pawnee County

Peter Adamson, Jr.'s, No. 5 Thomas, SW cor. NE NW, Section 25-21-8, is drilling at 900 feet. Edwards and others' No. 1 Edmundson, NW cor. SW, Section 20-21-9, made 20 bbls. in sand at 850-58 feet.

Payne County

Consolidated Drilling Co. has built the rig for No. 1 Freeman, SW cor. Section 4-18-6.

Stephens County

Ellis Drilling Co. has cemented the surface pipe at No. 4 Ketchem, SE cor. NE NW NW, Section 25-1-9w. American Pipe Line Co.'s No. 7 Dexter, CEL SE NW, Section 34-1s-8w, is rigging up. Lone Eagle Oil Co.'s No. 11 Simpson, SW cor. NE NW SE, Section 34-1s-8w, has cemented pipe at 1,840 feet. Ven Mex Oil Co. and Mid-Continent Petroleum Corp.'s No. 7 Nigh, C NE NW, Section 34-1s-8w, is rigging up. Clark & Cowden's rig is up for No. 5 Davison, SW cor. NW SW, Section 13-1s-4w. Ven Mex Oil Co. and Mid-Continent Petroleum Corp.'s No. 1-B Bush, C SW NW, Section 3-2s-8w, is rigging. Magnolia Petroleum Co. made location for No. 6 Peck, SE cor. SW, Section 13-2s-8w.

Hupp & Duff's No. 5 Burke, SE cor. SW SW NE, Section 34-1s-8w, is flowing 60 bbls. from sand at 1,848-52 feet. Lone Eagle Oil Co.'s No. 10 Simpson, NE cor. NW NW SE, Section 34-1s-8w, is swabbing 115 bbls. from sand at 1,840-52 feet. Ven Mex Oil Co. and Mid-Continent Petroleum Corp.'s No. 1-C Gilworth, C NW NW, Section 2-2s-8w, is pumping 7 bbls. from sand at 1,922-24 feet. Ellis Drilling Co.'s No. 1 Yates, SW cor. NE, Section 4-3s-7w, has been abandoned at 2,425 feet.

Hughes County

Steckelbury and others' No. 1 Lowery, NW cor. Section 19-9-10, is rigging up. Gypsy Oil Co. and others' No. 1-A J. Long, NW cor. SE, Section 14-8-9, is a rig going up. Jarvis & Holm's No. 3 Street, SE cor. SW SW, Section 21-7-8,

is a rig under construction. The Prairie Oil & Gas Co. has made location for No. 1 Cheparney, NW cor. NW SE, Section 7-8-9.

Oklahoma County

Cromwell and others' No. 2 Trosper, SW cor. NW SE NW, Section 12-11-3w, Oklahoma City Pool, is a cellar.

Pontotoc County

Benedum & Trees' No. 1 Molly, SE cor. SW, Section 30-5-5, is a cellar. The rig is on the ground for No. 1 Coker, SW cor. NW NW, Section 31-5-5. The cellar has been dug for No. 5 Mole, NE cor. SE NE, Section 31-5-5. No. 1 Lowery, NE cor. SW NW, Section 31-5-5, is a cellar.

Pottawatomie County

Twin State Oil Co. is erecting the rig for No. 1 Magruder, NE cor. Section 7-9-5, Earlsboro Pool. Empire Oil & Refining Co. and Amerada Petroleum Corp.'s No. 1 Henry, SW cor. NE NW, Section 8-9-5, is a rig under construction. Wilcox Oil & Gas Co. has the cellar dug for No. 6 Smith, NE cor. SE, Section 8-8-5, Maud Pool. Gypsy Oil Co. has the rig on the ground for No. 1 Gosland, NW cor. SW, Section 9-8-5. Erwin & Martin made location for No. 3 Kelly, NW cor. NE NE, Section 2-7-4, North St. Louis area.

Independent Oil & Gas Co. and Margay Oil Co.'s No. 1 Crain, SE cor. SW NE, Section 8-7-4, St. Louis Pool, is a rig going up. Twin State Oil Co. made location for No. 1 Rhodd, SW cor. SE NE, Section 8-7-4. Darby Petroleum Corp.'s No. 2 Nixon, SE cor. SW SW, Section 9-7-4, is a rig under construction. Mid-Continent Petroleum Corp.'s No. 1 J. M. Robbins, SW cor. SE SW, Section 9-7-4, is rigging up. The rig is being built for No. 2 Robbins, SE cor. SW, Section 9-7-4.

Magnolia Petroleum Co. is erecting the rig for No. 2 Caudle, SW cor. NW SW, Section 13-7-4. Darby Petroleum Corp. is building the rig for No. 4 Youngblood, NW cor. NE NW, Section 16-7-4. No. 5 Youngblood, SW cor. NE NW, Section 16-7-4, is a rig on the ground. Minnehoma Oil Co. made location for No. 2 Simms, SE cor. NE SE, Section 16-7-4. Houston Oil Co. is building the rig for No. 4 Wyatt, NW cor. SW, Section 17-7-4. Sinclair Oil & Gas Co. made location for No. 6 Neeley, NE cor. SW SW, Section 25-7-4. Sinclair Oil & Gas Co. and Mid-Continent Petroleum Corp.'s No. 1 Cummings, SE cor. NE SE, Section 6-7-5, is rigging up. Shaffer Oil & Refining Co. and Margay Oil Co. made location for No. 1 Adams, NW cor. NE, Section 11-6-3. T. B. Slick and Amerada Petroleum Corp.'s No. 2 Walker, SE cor. NE SE, Section 19-6-4, Asher Pool, is a rig on the ground. No. 3 Walker, SW cor. NE SE, Section 19-6-4, is also a rig on the ground.

Mid-Continent Petroleum Corp.'s No. 4 Rogers, NW cor. SE SW, Section 5-9-5, Earlsboro Pool, is pumping 130 bbls. from Wilcox sand at 4,432-40 feet. Tidal Oil Co.'s No. 1 Dunn, NE cor. Section 12-8-4, Maud Pool, is dry and abandoned at 4,550 feet. No. 2 Dunn, NW cor. NE NE, Section 12-8-4, has been drilled to 4,394 feet and abandoned. Twin State Oil Co.'s No. 3 Colvin, SE cor. NE SW, Section 7-8-5, has been abandoned at 4,548 feet in Wilcox sand.

Amerada Petroleum Corp.'s No. 1 Richardson, NE cor. SW, Section 16-7-4, Pearson Pool, swabbed 50 bbls. from 3,770 feet after drilling to 4,220 feet in Simpson and plugging back Houston Oil Co.'s No. 1 Wyatt, NE cor. NW SW, Section 17-7-4, flowed 1,414 bbls. from Simpson sand at 4,145-4,233 feet. Tom Slick Oil Co. and Amerada Petroleum Corp.'s No. 1 Walker, NE cor. SE, Section 19-6-4, Asher Pool, made 4,090 bbls. from Viola lime at 3,608-82 feet.

W. B. Pine's No. 1 Linger, SW cor. NE, Section 18-8-5, Maud Pool, has been plugged back from 4,413 feet in Wilcox sand at 4,135 feet and is pumping 25 bbls. from Hunton lime and Misener sand. The Prairie Oil & Gas Co. and T. B. Slick's No. 1 Ramsey, NW cor. SE NE, Section 18-7-5, St. Louis Pool, has been abandoned in Wilcox sand at 4,180-4,303 feet.

Seminole County

Amerada Petroleum Corp. has the cellar dug for No. 1 Sullivan, SW cor. NW, Section 17-9-6. Marland Oil Co. moved the rig out for No. 1 Thomlinson, SE cor. SW NW, Section 18-9-6. Pure Oil Co. has the cellar dug for No. 1 Strothers "G," SW cor. NW NW, Section 28-9-6. Continental Oil Co. made location for No. 3 Johnson, NW cor. SE NW, Section 18-9-7, East Seminole Pool. Location was also made for No. 4 Johnson, NE cor. SE NW, Section 18-9-7. Amerada Petroleum Corp. is building the rig for No. 1 Reed, SW cor. NW, Section 12-8-5, Mission Pool. Pure Oil Co. moved the rig in for No. 1 Young Pepper, SE cor. NE SW, Section 22-7-6, Little River Pool.

The Texas Company made location for No. 1 Chilcote, SW cor. NW, Section 4-7-7, East Little River Pool. The Prairie Oil & Gas Co. is moving the rig in for No. 2 Raitman, NE cor. SE NW, Section 18-9-6. The rig is also moving in on No. 3 Raitman, SW cor. SE NW, Section 18-9-6. No. 1 Calkins, NW cor. NW SW, Section 17-9-6, is a rig under construction. The Prairie Oil & Gas Co. and T. B. Slick made location for No. 1 Anna, NW cor. SE, Section 31-6-7.

Sinclair Oil & Gas Co.'s No. 1 Miller, NE cor. NW SE, Section 24-9-5, Earlsboro Pool, has been completed for 587 bbls. in Wilcox sand at 4,245-51 feet. Magnolia Petroleum Co.'s No. 1 D. W. Anderson, NE cor. NW SE, Section 18-9-6, flowed 2,376 bbls. from Wilcox sand at 4,358-70 feet. McCulloch Oil Co.'s No. 1 Coody, SE cor. SW SE, Section 18-9-7, East Seminole Pool, is dry and abandoned at 4,384 feet. Sinclair Oil & Gas Co.'s No. 2 Bean, SW cor. NE NW, Section 11-8-5, Carr City Pool, swabbed 80 bbls. from 4,140 feet after plugging back from 4,468 feet. No. 3 Bean, NE cor. NW, Section 11-8-5, swabbed 60 bbls. at 4,165 feet after plugging back from 4,435 feet in Wilcox sand.

Carter Oil Co.'s No. 1 Barbee, SW cor. Section 4-8-6, Mission Pool, is dry and abandoned at 4,923 feet. Gypsy Oil Co.'s No. 1 N. Barkus, SE cor. SW, Section 6-8-6, was deepened from 4,215 feet to 4,217 feet and increased from 1,400 bbls. to 2,290 bbls. after the shot. No. 5 N. Barkus, NW cor. SW, Section 6-8-6, was shot with 20 quarts and increased from 150 bbls. to 3,565 bbls. W. B. Pine's No. 1 Bean, SW cor. NE SW, Section 13-7-6, Little River Pool, has been shut in for 82,000,000 feet of gas in sand at 3,356-99 feet, total depth 4,165 feet.

Barnsdall Oil Co.'s No. 4 Hotulke, SE cor. NE SE, Section 22-7-6, flowed 1,125 bbls. in sand at 3,095-3,105 feet. Carter Oil Co.'s No. 1 B. Larney, SE cor. SW NW, Section 26-7-6, is dry and abandoned at 3,380 feet. The Texas Company and Independent Oil & Gas Co.'s No. 1 H. Hotulke, NE cor. SE SE, Section 22-7-6, is producing 740 bbls. from Gilcrease sand at 3,102-21 feet after whipstocking back from Wilcox sand at 4,183 feet.

The Prairie Oil & Gas Co.'s No. 1 Raitman, SE cor. NW, Section 18-9-6, has been completed for 1,080 bbls. in Wilcox sand at 4,228-36 feet. No. 3 P. Cudjo, NE cor. NW NW, Section 26-7-6, Little River Pool, made 350 bbls. in Gilcrease sand at 3,119-43 feet. No. 4 P. Cudjo, SE cor. NW NW, Section 26-7-6, made 410 bbls. from Gilcrease sand at 3,170-80 feet. No. 4 Baker, SE cor. NW NE, Section 24-9-5, Earlsboro area, has been abandoned at 4,250 feet. The Prairie Oil & Gas Co. and T. B. Slick's No. 1 Raglin, NW cor. NE SW, Section 36-7-6, is a dry hole in Wilcox sand at 4,620-24 feet.

Production of St. Louis Pool

Production of St. Louis and Asher Pools by companies and leases for June 20 follows:

Company and farm—	S.T.R.	Wells	Prod.
Atlantic-Indep.:			
Burke	16-7-4	1	560
Barnsdall:			
Stahl	30-7-5	3	1,200
Blackwell-Omar:			
Cherry	25-7-4	2	680
Darby:			
Youngblood	16-7-4	1	352
Gypsy:			
Bruno	25-7-4	4	60
Collins	25-7-4	4	482
Dodson	26-7-4	4	160
Green	17-7-4	1	0
LeClair	23-7-4	4	2,225
Roseman	26-7-4	3	475
Stahl	30-7-5	8	960
Home Gas:			
Town Lot	14-7-4	1	343
Houston:			
Wyatt	17-7-4	1	888
Independent:			
Blandin	30-7-5	5	877
Bourin	1-7-4	2	2,125
Youts	19-7-5	5	8,400
Indep.-Darby:			
Pappen	16-7-4	1	1,161
Freid	23-7-4	2	0
LeClair	23-7-4	1	0
Inter-Ocean:			
McGee	23-7-4	6	265
Indep.-Westland:			
Rhodd	16-7-4	1	3,792
Irwin-Martin:			
Kelly	2-7-4	1	3,190
Magnolia:			
Banta	14-7-4	3	35
Brandenburg	18-7-5	3	1,737
Caudle	13-7-4	1	308
Cherry-A	26-7-4	5	836
Cherry-B	26-7-4	3	217
G. W. Fyke A	20-7-5	1	590
G. W. Fyke B	20-7-5	2	501
Tull Fyke B	20-7-5	2	727
Tull Fyke D	29-7-5	2	302
Hembree	19-7-5	4	1,151
Latimer	17-7-4	1	563
J. M. Robbins	15-7-4	4	260
Mary Wilborn	24-7-4	2	410
S. A. Wilborn	24-7-4	5	925
Charles Youts	20-7-5	5	759
C. A. Youts	19-7-5	4	565
H. E. Youts	20-7-5	7	4,418
Hugbanks	17-7-4	1	2,253
McCullough-Blackwell:			
Bruno	25-7-4	5	925
McCullough-Mid-Continent:			
Smith	25-7-4	6	720
Mid-Kansas:			
Getzleman	25-7-4	4	1,120
Lunay	30-7-5	3	410
Phillips:			
Stahl	30-7-5	4	835
Prairie:			
Desmond	25-7-4	4	125
Ellison	25-7-4	4	580
Gammon	30-7-5	8	3,430
Hembree	19-7-5	4	2,615
Linn	30-7-5	4	765
Wolfe	29-7-5	4	3,712
Youts	19-7-5	4	210
Prairie et al:			
Davis	18-7-5	4	136
Prairie-Maud:			
Nesbit	18-7-5	2	321
Prairie-Shaffer:			
Rice	17-7-4	1	895
Pure:			
Dodson	26-7-4	2	158
Thomas	26-7-4	4	8,628
Shaffer:			
Tolon	30-7-5	4	530
Sinclair:			
Blandin	24-7-4	13	1,245
Brandenberg	7-7-5	3	1,185
Bruno	26-7-4	2	3,255
Gilbreath	25-7-4	2	955
Nadash	29-7-5	5	520
Nealy	25-7-4	5	330
Nealy-B	25-7-4	2	620
Nesbit	18-7-5	7	2,615
O'Kitchee	19-7-5	7	425
Superior:			
Jackson	36-8-4	1	95
Texas:			
Cherry	25-7-4	4	1,220
Westheimer-Daube:			
Freid	24-7-4	5	607
Garrett	23-7-4	2	3,646
Total		111	87,890

ASHER PRODUCTION

Simms Oil Co.:			
Laster	19-6-4	2	2,495
Prairie & Slick:			
Laster	19-6-4	2	3,965
Slick & Amerada:			
Wilsie	19-6-4	1	1,730
Tom Slick Oil Co.:			
Bledsoe	20-6-4	1	90
Weldon	20-6-4	2	595
Total		8	8,875

Production of Seminole Area

Production of pools in the Seminole area by companies and leases for June 20 follows:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2-7-6	3	290
Amerada-Wilcox:			
Fore	35-8-6	2	765
Barnsdall:			
Cotcha	23-7-6	2	305
Hotulke	22-7-6	3	1,155
Walker	4-7-6	1	21
Blackwell:			
Baker	11-7-6	4	1,185
Nitey	35-8-6	5	305
Talley	14-7-6	4	800
Bryan & Emery:			
Walker	4-7-6	1	13
Carter:			
Cotcha, M.	23-7-6	3	115
Cudjo, L.	23-7-6	2	425
Fish	36-8-6	4	690
Harjo, C.	11-7-6	3	2,420
Harjo, M.	13-7-6	4	660
Jackson	11-7-6	4	882
B. Larney	26-7-6	1	420
Larney	24-7-6	4	2,002
Lena	10-7-6	1	590
Moore	11-7-6	2	50
Tewee	14-7-6	6	905
Thomas	11-7-6	1	355
Wilson	12-7-6	1	235
Champlin:			
Tewee	14-7-6	2	1,010
Continental:			
Cosar	36-8-6	7	1,097
Cosar, M.	25-8-6	1	331
Continental & Fisher:			
Milsey	11-7-6	2	319
Empire:			
Charty	24-7-6	1	69
Coker	13-7-6	2	730
Cotcher	27-7-6	1	37
Sandlin	3-7-6	1	12
Gypsy:			
Brown, C.	33-8-6	2	260
Brown, M.	33-8-6	1	975
Campbell	36-8-6	2	15
Conard	23-7-6	2	228
Cosar, W.	36-8-6	2	217
Cotcha	23-7-6	11	5,292
Denmark	11-7-6	3	1,320
Hulhoke	14-7-6	10	1,213
Mungee	1-7-6	1	0
Payne	5-7-7	2	3,385
Pottie	35-8-6	4	563
Renton	11-7-6	3	115
Independent:			
Carpenter	27-7-6	3	878
Davis, R.	13-7-6	4	1,245
Tewee	14-7-6	6	1,085
Williams	15-7-6	1	515
Independent & Highway:			
Harris	23-7-6	8	1,278
Independent & White Eagle:			
Davis	2-7-6	4	480
I. T. I. O.:			
Campbell	1-7-6	1	102
Dungan	35-8-6	3	334
House, M. A.	1-7-6	1	38
House, W. E.	1-7-6	1	0
House, "B"	2-7-6	4	727
Hull	26-8-6	3	49
Jackson	1-7-6	3	543
McCulla	1-7-6	3	700
Nitey	2-7-6	5	105
Phoebe "A"	36-8-6	2	32
Poebe "B"	36-8-6	3	77
Reed	1-7-6	1	4
Soketheche	1-7-6	3	269
Magnolia:			
Cruse	2-7-6	4	136
Denby	11-7-6	4	224
Harjo, A.	14-7-6	2	80
Harjo, B.	14-7-6	2	184
Pottie	35-8-6	4	44
Reed, E.	31-8-7	1	28
Reed, I.	22-7-6	3	504
Marland & Shaeffer:			
Harrison	4-7-7	1	300
McCulloch & Sands:			
Harrison	4-7-6	1	1
Mid-Continent:			
Bruner	11-7-6	4	120
Eleck	23-7-6	1	30
Smith	5-7-7	5	8,675
Wadsworth	36-8-6	7	185
Hoyecha	26-8-6	7	1,705
Pine-Phillips:			
Pottie	35-8-6	1	118
Prairie:			
Chilcoat	25-8-6	3	500
Coker	1-7-6	2	775
Gibson	14-7-6	5	1,230
Harris	14-7-6	4	480
House	2-7-6	4	145
Johnson	24-7-6	2	1,225
Lustey	5-7-7	2	0
Moppin	24-7-6	2	260
Reed	13-7-6	2	815
Talley	14-7-6	4	560
Thomas	5-7-7	1	180
Williams	15-7-6	2	355
Wood	26-7-6	3	295
Slick:			
Cudjo	26-7-6	4	1,175
Prairie & Amerada:			
Sunny	14-7-6	5	1,160
Pure:			
Brinson	24-7-6	3	1,320
Cotcha	14-7-6	10	1,607
Harjo	11-7-6	4	1,229
Hollins	11-7-6	1	180
Reiter-Foster:			
Bunyard	14-7-6	4	635
Jefferson	31-7-6	1	12
Schaeffer:			
Narcombe	36-8-6	2	145
Shell:			
Caesar	11-7-6	1	0
Glass	26-7-6	1	0
Hotulke	23-7-6	4	876
Johnson	13-7-6	4	1,348
Sinclair:			
Blanton	11-7-6	1	322
Cosar	30-8-6	3	960
Haney	12-7-6	1	90
Tewee	14-7-6	2	1,355
Sinclair & Kingwood:			
Pompey	24-7-6	1	50
Skelly:			
Carl	14-7-6	2	1,521
Snowden-McSweeney:			
Tiger	13-7-6	2	489
Superior:			
Potulka	31-8-6	1	2
Texas:			
Brooks	25-8-6	1	15
Coker	1-7-6	3	12
Janey	11-7-6	6	1,335
Texas & Independent:			
Hutulke	23-7-6	4	985
Hutulke	22-7-6	3	802
Tidal:			
House	1-7-6	2	420
Johnson	1-7-6	1	22
Twin State:			
Lowe	25-8-6	1	70
Total		339	77,498

Carr City Pool

Barnsdall:			
Coker	11-8-5	8	2,725
Fife	14-8-5	2	213
Carter:			
Coker	2-8-5	1	1,790
Empire:			
Cluck	11-8-5	10	4,495
Gypsy:			
Coker	10-8-5	1	47
Fife	14-8-5	1	18
I. T. I. O.:			
Simpson	10-8-5	1	6
Tully	10-8-5	1	21
Magnolia:			
Fee	11-8-5	2	488

Company, farm—	Location	Wells	Prod.
Killing	14-8-5	1	9
Prairie:			
Billington	11-8-5	9	1,925
Mitchell	15-8-5	1	0
Sinclair:			
Bean	11-8-5	3	410
Harjo	11-8-5	3	954
Total		44	13,101

Maud Pool

Amerada:			
Ballard	1-8-4	1	75
Fehlig	7-8-5	1	100
Gossland	8-8-5	3	240
Gravel	1-8-4	1	15
Hallum	1-8-4	4	2,085
Amerada & Barnsdall:			
Wallace	17-8-5	3	255
Amerada & Hull:			
Green	20-8-5	3	150
Darby:			
Ketcham	19-8-5	1	6
Empire:			
Smith	8-8-5	1	1,000
Gypsy:			
Bourassa	7-8-5	4	97
Miller	18-8-5	8	722
Independent:			
Harding	18-8-5	5	240
I. T. I. O.:			
State	16-8-5	1	113
Laurel O. & G.:			
Billington	18-8-5	3	227
Magnolia:			
Billington	8-8-5	4	140
Green	20-8-5	1	173
Marland & Shell:			
Everett	18-8-5	1	132
Mid-Continent:			
Shelton	18-8-5	3	20
Phillips:			
Hudson	19-8-5	4	230
Wallace	17-8-5	2	180
Pine:			
Lingefelt	18-8-5	2	51
Smith	8-8-5	1	460
Prairie:			
Campbell	18-8-5	8	180
Prairie & White Eagle:			
Villines	20-8-5	1	25
Pure:			
Lindly	18-8-5	8	331
Urbansky	19-8-5	2	112
Wiley	8-8-5	4	1,293
Sinclair:			
Bellars	19-8-5	10	715
Calvin	7-8-5	3	238
Lewis	6-8-5	2	100
Skelly & Lenox:			
Green	20-8-5	1	160
Skelly & Margay:			
Lingefelt	18-8-5	4	229
Texas:			
Calvin	7-8-5	8	270
Tidal:			
Dunn	12-8-4	1	45
Everett	18-8-5	2	100
Smith	8-8-5	1	150
Twin State:			
Calvin	7-8-5	2	150
Wilcox:			
Smith	8-8-5	4	2,104
Total		120	12,913

Mission Pool

Amerada:			
Rice	5-8-6	2	1,120
Carter:			
Fuswa	18-8-6	4	940
Melisse	9-8-6	1	805
Micco	8-8-6	2	100
Darby:			
Judy	1-8-5	1	70
Gypsy:			
Baby	6-8-6	1	15
Barkus, N.	6-8-6	10	3,055
Barkus, S.	7-8-6	1	55
Dosar	7-8-6	5	1,528
Hardy	7-8-6	7	450
Harjoche	7-8-6	4	112
Micco, L.	8-8-6	2	30
Micco, S.	8-8-6	1	37
Mission .....5 and	6-8-6	7	2,790
Mosar	1-8-5	4	1,260
Independent:			
Lawson	1-8-5	5	1,793
Independent & Kistler:			
Payne	7-8-6	4	2,113
Marland:			
Maines	7-8-6	4	1,135
McMahon et al:			
Harjo	7-8-6	2	918
Mid-Kansas:			
Moore	7-8-6	1	5
Mid-Continent:			
Ripley	13-8-5	1	60
Minnehoma:			
Neal	7-8-6	4	897
Pine:			
Harjo	6-8-6	2	1,091
Micco	8-8-6	1	26
Prairie:			
Crain	7-8-6	1	175
Melton	6-8-6	3	1,475
Micco	5-8-6	1	10
Townsend	6-8-6	1	0
Prairie & Gypsy:			
Owens	18-8-6	1	445
Nellie	12-8-6	1	275
Shaffer:			
Weaver	12-8-5	2	1,250
Shell & Marland:			
Herndon	7-8-6	3	504
Shell & Papoose:			
Maines	7-8-6	8	1,753
Sinclair:			
Hardy	7-8-6	4	1,299
Sinclair & Lenox:			
Judy	1-8-5	1	70
Tidal	12-8-5	5	1,935
Twin State:			
Hayes	8-8-6	2	1,365
Judy	6-8-6	2	2,055
Ripley	12-8-5	1	525
Total		115	33,543

Company, farm—	Location	Wells	Prod.
Bowlegs Pool			
Amerada:			
Roscoe	15-8-6	6	780
Atlantic:			
Baker	10-8-6	4	281
Fleet	23-8-6	3	109
Grayson	13-8-6	4	499
Jones, A.	16-8-6	2	20
Jones, C.	9-8-6	1	58
Barnsdall:			
McNac	28-8-6	1	22
Murrow	11-8-6	4	334
Carter Oil:			
Bowlegs	15-8-6	4	390
Burden	23-8-6	2	237
Harjoche	14-8-6	6	535
Hilly	23-8-6	3	200
Jones	11-8-6	4	487
Walker	15-8-6	4	225
Wise	23-8-6	11	1,195
Dixie:			
Culley	11-8-6	1	40
Empire:			
Lacy	14-8-6	6	242
Wise	23-8-6	2	120
Gypsy:			
Bowlegs	22-8-6	1	0
Bradley	9-8-6	1	0
Cumsey	10-8-6	4	620
Grayson	13-8-6	4	420
Harjoche	10-8-6	3	433
Jones	11-8-6	1	0
Walker	15-8-6	7	1,147
Wise	23-8-6	2	75
I. T. I. O.:			
Barnett	24-8-6	2	115
Barnett "B"	23-8-6	1	15
Billington	22-8-6	4	328
Bowlegs	22-8-6	9	1,344
Davis	13-8-6	4	151
Fay	13-8-6	9	1,270
Goforth	15-8-6	12	1,407
Livingston	15-8-6	10	1,393
Lizzie	13-8-6	3	436
Walker	15-8-6	8	980
Williams	12-8-6	1	215
Wilmott	15-8-6	4	199
Work	24-8-6	1	58
Youngblood	24-8-6	2	49
Magnolia:			
Davis	13-8-6	3	370
Davis, M.	13-8-6	1	85
Hammond	10-8-6	3	571
Rhodes	12-8-6	5	480
Van Buskirk	9-8-6	4	432
McCulloch:			
Bowlegs	22-8-6	2	119
Mid-Continent:			
Baker	10-8-6	4	209
Smith	12-8-6	6	345
Minnehoma:			
Bowlegs	15-8-6	3	28
Prairie:			
Gahagan	23-8-6	3	120
Harber	10-8-6	8	1,520
Jones	3-8-6	1	172
Jones	11-8-6	4	320
Templeton	12-8-6	4	1,970
Whitney	23-8-6	4	185
Pure Oil:			
Reed	14-8-6	14	2,519
Strother "D" ..11 and	14-8-6	4	398
Strother "F"	10-8-6	7	2,050
Shaffer:			
Lacy	14-8-6	3	407
Shell:			
Taylor	16-8-6	6	45
Sinclair:			
Cumsey	10-8-6	4	715
Harjo	14-8-6	3	667
Jones	9-8-6	7	300
E. Jones	11-8-6	5	642
Taylor	10-8-6	4	780
Taylor, W.	10-8-6	3	473
Walker	22-8-6	4	972
Texas:			
Reed	14-8-6	11	700
Tidal:			
Grayson	13-8-6	4	400
Harjoche	10-8-6	6	825
Total		303	35,248

Earlsboro Pool

Amerada:			
Anderson	15-9-5	2	264
Cowden	4-9-5	7	877
Rogers	3-9-5	2	71
Atlantic & Sinclair:			
Foreman	18-9-5	1	105
Barnsdall:			
Brown	10-8-5	3	1,107
Bruner, F.	2-9-5	2	150
Bruner, N.	10-9-5	1	189
Cudjo	14-9-5	1	25
Davis, D.	11-9-5	3	40
Davis, J.	11-9-5	4	1,151
Davis, M.	11-9-5	2	33
Gibson	9-9-5	7	1,029
Hern	15-9-5	1	1
Ingram	1-9-5	7	360
Pack, S.	10-9-5	4	85
Peter	10-9-5	3	52
Sango	1-9-5	2	1,441
Sebalka	15-9-5	1	187
Sullivan, H.	11-9-5	1	4
Sull-Harjo	10-9-5	2	14
Wasutke	12-9-5	3	266
Burke-Greis:			
Wisner	6-9-6	2	260
Burke-Greis & Red Bank:			
Mays	1-9-5	3	1,670
Carter:			
Davis	13-9-5	3	135
James	6-9-6	3	1,710
Carter et al:			
Gilliam	13-9-5	2	1,295
Continental:			
Kays	2-9-5	2	29
Spencer	12-9-5	4	653
Cosden, J. S., Inc.:			
Anderson	13-9-5	1	1,740
Empire:			
Barker	12-9-5	1	22
Edmondson	3-9-5	2	25
Empire & Marland:			
Anderson	13-9-5	1	482

Company, farm—	Location	Wells	Prod.
Empire & Amerada:			
Bullock	8-9-5	2	1,135
Gypsy:			
Bruner	10-9-5	4	1,455
Carter, B.	11-9-5	7	1,936
Earl	16-9-5	1	2
Hunick	5-9-5	2	1,677
Noble	12-9-5	4	817
Payne	18-9-6	1	143
Peter	10-9-5	1	75
Sango	1-9-5	13	2,047
State	16-9-5	3	265
Independent:			
Bruner	10-9-5	3	40
Sullivan	10-9-5	1	15
Knapp	8-9-5	2	1,514
Indep.-Margay:			
Gains	11-9-5	3	195
Magnolia:			
A. Anderson	18-9-6	3	1,317
D. W. Anderson	18-9-6	1	2,376
Bryant	9-9-5	6	46
Cowden	4-9-5	2	15
Dixon	12-9-5	1	18
Edmondson	3-9-5	1	3
Germany	30-9-5	1	20
Gilliam	13-9-5	2	1,964
Holmsley	11-9-5	6	5
Hyde	13-9-5	2	137
Ingram	10-9-5	1	15
Lena	10-9-5	3	42
Moore	24-9-5	1	885
Seay	12-9-5	9	163
Simpson	10-9-5	4	224
Sparks	11-9-5	6	91
Sullivan	12-9-5	3	23
Mid-Continent:			
McCumber	9-9-5	4	52
Rogers	5-9-5	4	2,955
Mid-Kansas:			
Anderson	14-9-5	1	35
Phillips:			
Dunaway	14-9-5	1	20
Reese	8-9-5	1	720
Prairie:			
Baker	24-9-5	5	1,135
Davis	13-9-5	3	379
Graham, C.	3-9-5	2	10
Graham, O.	10-9-5	4	830
James	6-9-6	2	0
Rartman	18-9-6	1	2,590
Stidham	11-9-5	9	803
Prairie & Skelly:			
Campbell	6-9-6	7	2,725
Prairie & Whitney:			
Harjo	24-9-5	1	20
Shaffer:			
Clark	1-9-5	2	210
Shell:			
Bayless	17-9-5	1	10
Hearn	13-9-5	1	87
Spencer	12-9-5	2	1,548
Sinclair:			
Alexander	36-10-5	1	905
Foreman	18-9-5	1	15
Hollins	12-9-5	1	15
Miller	24-9-5	1	475
Sango	2-9-5	4	1,410
Skelly:			
Mays	1-9-5	4	946
Shepard	6-9-6	4	1,163
Spencer	12-9-5	1	119
Skelly & Atlantic:			
Cherry	6-9-6	4	428
Lottie	6-9-6	4	1,557
Varman	5-9-6	1	49
Superior:			
Ingram	1-9-5	2	1,087
Walker	2-9-5	2	1,457
Texas:			
Anderson	2-9-5	8	120
Brown	10-9-5	8	85
James	6-9-6	2	360
Rogers	5-9-5	5	1,135
Wilmott	10-9-5	6	85
Tidal:			
Walker	35-10-5	3	1,415
Watkins	9-9-5	7	2,145
Twin States:			
Barker	12-9-5	3	27
Hern	2-9-5	2	65
Total		305	63,316

Seminole Pool

Amerada:			
Fixico	23-9-6	2	93
Killingsworth	23-9-6	4	481
Rentine	23-9-6	3	330
Atlantic:			
Cudjo, N.	35-9-6	3	485
Barnsdall:			
Carter	24-9-6	6	203
Henry	14-9-6	2	508
Jones	34-9-6	4	430
Carter Oil:			
B. Carter	24-9-6	2	45
F. Carter	23-9-6	3	122
Creamer	34-9-6	1	7
Cudjo, R.	35-9-6	4	105
Cudjo, W.	34-9-6	1	102
Gilliland	27-9-6	1	150
Grisso	23-9-6	4	95
Grisso, M.	15-9-6	1	220
Killings, G. F.	14-9-6	4	30
Killings, M. E.	23-9-6	12	4,150
Knapp	13-9-6	1	32
Lukes	27-9-6	5	945
Pounder	34-9-6	2	175
Simpson	35-9-6	2	155
Strothers	34-9-6	4	390
Vierson	23-9-6	1	20
Empire:			
Gross	25-9-6	1	45
Wilson	34-9-6	2	320
Gypsy:			
Butler	35-9-6	4	727
Carter	24-9-6	8	428
Cudjo	34-9-6	4	400
Fixico	26-9-6	7	70
Harjo	25-9-6	3	245
Wolfe	26-9-6	5	447
Independent:			
Fixico, P.	23-9-6	3	380
Harjo	25-9-6	2	60
Butler	35-9-6	3	900
Fixico, T.	26-9-6	5	312

Company, farm—	Location	Wells	Prod.
Jones	26-9-6	4	376
I. T. I. O.:			
Allen	25-9-6	2	43
Bowlegs	26-9-6	12	1,850
Goodin	23-9-6	4	306
Harjo	23-9-6	3	56
James	24-9-6	2	65
Reed	24-9-6	1	8
Kingwood:			
Johnson	22-9-6	3	408
Magnolia:			
Boren	2-8-6	1	4
Franks	25-9-6	2	140
Mid-Continent:			
Rentie	14-9-6	9	465
Tayeche	24-9-6	7	160
Phillips:			
Strothers	27-9-6	2	90
Prairie:			
Cudjo	35-9-6	3	655
Franks	35-9-6	6	1,075
Giblet	35-9-6	3	1,225
Gross	25-9-6	5	35
Mason	36-9-6	1	60
Spencer	13-9-6	1	6
Strothers	27-9-6	8	1,795
Tiger	1-8-6	1	35
Pure Oil:			
Strothers	26-9-6	17	4,667
Strothers, B.	36-9-6	4	655
Strothers, C.	34-9-6	1	403
Shell:			
Harber	22-9-6	1	214
Lasley	22-9-6	2	36
Sinclair:			
Carter	13-9-6	2	22
Cudjo "A"	35-9-6	6	720
Cudjo "B"	35-9-6	4	602
Dicey	22-9-6	2	560
Fixico	23-9-6	4	450
Superior:			
Cudjo	35-9-6	4	135
Noble	15-9-6	1	1
Texas:			
Mayhue	14-9-6	1	155
Strothers	2-9-6	1	0
Tidal:			
Carter	24-9-6	4	293
Fixico	26-9-6	7	1,295
Harjo	25-9-6	1	10
Harjo, T.	23-9-6	3	45
Turman:			
Cudjo	35-9-6	4	510
Grisso	35-9-6	1	68
Jones	34-9-6	4	998
Total		274	34,303

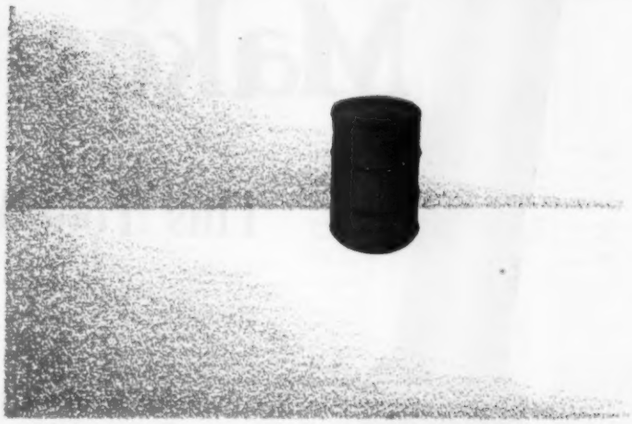
East Seminole Pool

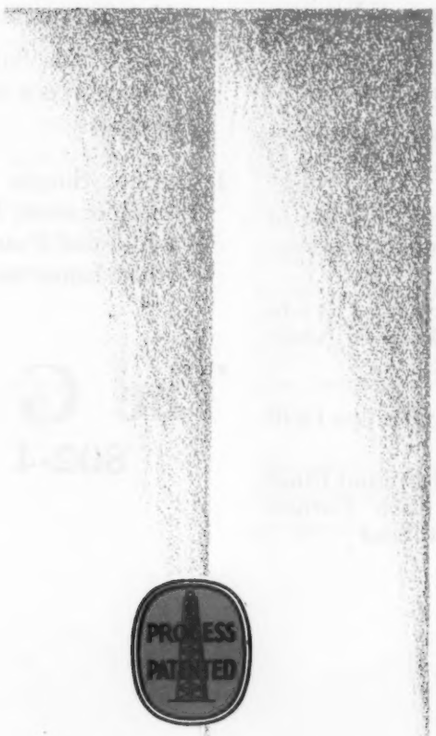
Barnsdall:			
Keypaya	7-9-7	1	20
Continental:			
Johnson	18-9-7	1	1,871
Gypsy:			
Harjo	18-9-7	1	446
Magnolia:			
Drewey	18-9-7	1	11
Marland:			
Buring	17-9-7	1	56
Marland & Sinclair:			
Perry	18-9-7	1	824
Prairie:			
Stubbs	18-9-7	1	0
Shaffer:			
Hargler	19-9-7	1	18
Sinclair:			
Coody	18-9-7	1	1,215
G. Johnson	18-9-7	1	70
Thompson "B"	18-9-7	1	745
J. Warrior	17-9-7	1	40
S. Warrior	17-9-7	1	75
Total		13	5,391

Searight Pool

Amerada:			
Johnson	4- 9-6	1	22
Strothers	8- 9-6	2	280
Barnsdall:			
Jackson	5- 9-6	2	25
Carter:			
Davis	4- 9-6	3	325
Frazier	3- 9-6	5	625
Kiker	2- 9-6	1	17
Stewart	10- 9-6	1	529
Mandler	3- 9-6	2	5
Slick	11- 9-6	2	1,535
Scott	26-10-6	1	12
I.T.I.O.	11- 9-6	1	535
Carter et al:			
Strothers	11- 9-6	1	910
Skiff	10- 9-6	1	180
Gypsy:			
Cudjo	4- 9-6	3	460
Nevins	32-10-6	1	688
Magnolia:			
Varnum	32-10-6	2	912
Mid-Continent:			
Grayson	34-10-6	4	27
Saloche	33-10-6	6	170
Mid-Continent & Homaokia:			
Nevins	32-10-6	4	1,375
Pine:			
Lula	4- 9-6	1	14
Prairie:			
Cannon	33-10-6	1	3
J. Carter	10- 9-6	1	3
Houch	33-10-6	1	3
Hurford	33-10-6	1	0
Kincaid	33-10-6	2	60
Wimer	22-10-6	1	15
Pure:			
Aldridge	3- 9-6	4	825
Shell:			
Strothers	3- 9-6	4	204
Sinclair:			
Polly	3- 9-6	4	1,495
Superior:			
Varnum	4- 9-6	1	0
Texas:			
Fleet	4- 9-6	1	20
Twin States:			
Varnum	4- 9-6	2	70
Wilcox:			
Chupco	4- 9-6	7	194
Total		74	11,538

EXPERIENCE





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This oil treating clinic is as wide as the petroleum industry, dates back to the first commercially successful separation of emulsified oil and water, and has witnessed the recovery of millions of barrels of oil.

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This Tool Will Save Millions of Dollars i
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EARLSBORO

The first wells of the famous Earlsboro Field, shown in cut below, were completed in the "Earlsboro" sand at 3500 ft. The big Wilcox production later found at 4200 ft., caused operators to rotate right through the Earlsboro without stopping. This sand, while erratic, produced some 1000 bbl. wells, and some wells that missed the Wilcox were plugged back with success. But the productivity of the "Earlsboro" sand over at least two-thirds of the area is an unknown quantity.

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The G & M Well Tester for Rotary Drilling Answers This Cry—

By Telling You Quickly and Accurately When, Where and If to Set Casing,

By Eliminating the Hazard of Passing Up Productive Formations, and

By Changing Uncertainty to Certainty and Doubt to Absolute Knowledge;

For This Tool, When Run on Drill Stem

Presents You With Actual Fluid Samples from Each Formation Encountered, and

Opens an Unobstructed Passage From the Top of Your Rat-Hole to the Surface, and

Produces the Same Effect as If Casing Were Set and the Well Bailed.

It Is Safe, Simple and Automatic in Operation, Fully Protected by Issued Patents, and Is the Most Important Development

The G & M C
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Tester!

Drilling Safe

in Time, Labor, and Material and Will Many Productive Sands

in Rotary Equipment in a Decade.

The G & M Well Tester Should Be on Every Derrick Floor.

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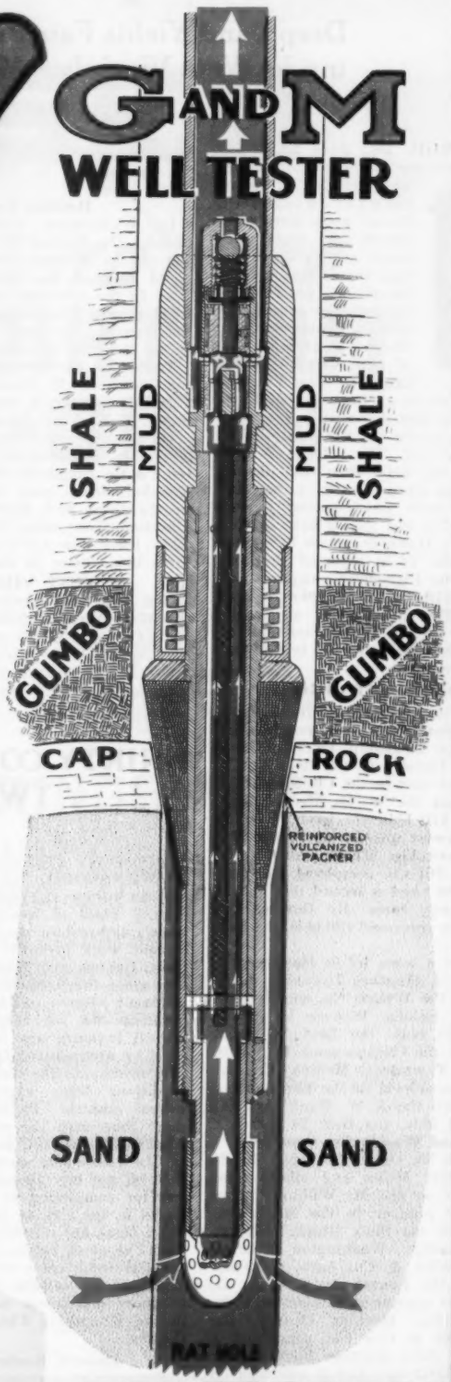
The valve movement is positive and automatic, opening when weight of drill-pipe is exerted, and closing when lifted. The fluid pressure is equalized in tool and, regardless of depth, the valve will not open until the packer is engaged. A fluid by-pass permits the packer to seat easily and naturally, and to be removed after test the same way. THIS IS VERY IMPORTANT.

The packer mandrel is adjustable to all diameter packers down to 4¼", of all lengths to 28", to any taper desired, and will test any size holes down to 6¼" in diameter.

The tool is constructed of extra heavy material and cannot be bent or sprung out of alignment.

Company, Inc.

Bldg., Dallas, Texas



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Good Completions in Southeast Ohio

Deep Sand Yields Fair Producers. Some New Work of Importance Starting in West Virginia. Marked Revival of Operations in Bradford Pool

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., June 24. — The result of operations in the Eastern fields was just the reverse of the preceding week. Fewer wells were completed, but there were more good completions than for several months. Nearly all are credited to the deep sand territory in Southeast Ohio. There is no great amount of new work starting, except in West Virginia, some of which is of importance. These fields are long past due with a new pool.

Operations in the old Bradford district have been revived. The activity is said to rival the old days when that district was furnishing more production than any other. The wells now coming in are small, averaging less than 2 bbls. at time of completion. However, leases have been eagerly sought. It is reported that one large operating Pittsburgh company paid a bonus of $10,000 for a 100-acre lease last week. This is regarded as an unprecedented price for territory not capable of furnishing anything better than very light pumpers.

SOUTHEAST OHIO

Sutheast Ohio made a creditable showing. In the southwest quarter of Section 2, Washington Township, Hocking County, the Hope Construction & Refining Co. completed and shot in the Clinton sand a second test on the W. H. Mercer farm. It produced 170 bbls. the first 24 hours. In the northwest quarter of Section 18, Hopewell Township, Muskingum County, the Midland Oil Co. completed and shot in the Clinton sand a second test on the Ella M. Denny farm. By flowing and swabbing they recovered 130 bbls. the first 24 hours.

Located on a town lot in Hanover village, Section 4, Hanover Township, Licking County, the Wehrle Co. completed a test on the Salome Weaver lot which produced 120 bbls. the first 24 hours after shot in the Clinton sand. In Lot 6, Harrisville Township, Medina County. Ray Jones completed in the Berea grit a second test on the J. W. Funk farm. It produced 25 bbls. the first 24 hours.

Noble and Washington Counties

In Section 35, Olive Township, Noble County, Albert Miller and others completed No. 7 on the M. Williams farm, a very light pumper in the Macksburg 500-foot sand. On Shay Ridge, Independence Township, Washington County, Shay, McMullin & Co. have a 10-bbl. pumper on the Ernest Smith farm. In the northwest quarter of Section 36, Falls Gore Township, Hocking County, the Brownlee Oil & Gas Co. completed a test on the John Burgess farm to the Clinton at 3,032 feet and it produced 50 bbls. the first 24 hours after shot. In Lot 86, Athens Township, Athens County, Gross and Frebault Co. completed a test on the George Karnes farm to the Berea grit at 1,204 feet and it is a duster.

In the northeast quarter of Section 24, Green Township, Hocking County, Perry Sturm and others completed No. 5 on the Woodruff Heirs farm to the Clinton at 2,930 feet and it produced 112 bbls. the first day after shot. In this same county, but in the northeast quarter of Section 10, Washington Township, the Ohio Fuel Gas Co. completed No. 2 on the J. F. Rohrer farm to the Clinton at 2,701 feet and it is a gas well good for 281,000 feet.

On Cow Run, Section 13, Lawrence Township, Washington County, the Peoples Banking & Trust Co., trustees, completed and shot in the first Cow Run sand No. 21 on the Berger Oil Co.'s lease. It is a light gasser. In Licking Township, Licking County, the A. H. Heisey Co. has started to drill on the James Davis farm.

Hocking County

In Washington Township, Hocking County, the Gordon Oil Co. completed a test on the Meldrim heirs' farm. It produced 55 bbls. the first 24 hours after shot. In the southeast quarter of Section 1, Hopewell Township, Licking County, the Pure Oil Co. has a 40-bbl. producer at No. 3 on the E. Loughman farm.

In Section 25, Sunbury Township, Monroe County, C. W. Paine and others have a 10-bbl. pumper in the Keener sand on the T. A. Burkhart farm.

On Reas Run, Section 50, Independence Township, Washington County, John C. Grau & Co. completed No. 4 on the Henry Steinhoff farm, good for 3 bbls. a day in the third Salt sand. In Section 19, Harrison Township, Perry County, the Ohio Fuel Gas Co.'s test on the May farm is a duster in the Clinton sand.

WEST VIRGINIA

The only good producer completed in the West Virginia fields was the South Penn Oil Co.'s No. 95 on the O. D. Stockley farm, in Geary district, Roane County. It is a natural producer estimated good for 75 bbls. a day. In the same district, the same company completed in the Big Injun sand No. 94 on the same farm, good for 15 or 20 bbls. a day.

On Wolf Pen Branch of Tuppers Creek, Union district, Kanawha County, 4 miles in advance of production, Matthews Burgess and others completed in the Berea grit a test on the J. D. Traxton farm. It is a light pumper good for less than 2 bbls. a day.

On Robinson Run, McClellan district, Doddridge County, the Starkey Oil Co. completed and shot in the Gordon stray sand a test on the Starkey heirs' farm showing for a 5-bbl. pumper.

In Grant district, Hancock County, R. J. Braden & Co. completed in the Berea grit No. 34 on the C. E. Brenneman farm, good for 10 bbls. a day.

In Sherman district, Calhoun County, B. J. Crowley's test on the Sarah E. Kersey farm is a gasser in the Salt sand. In Lee district, the Dunbar Oil & Gas Co. has a gasser in the Big Injun sand on the G. W. Bennington farm. In the same district, F. F. McIntosh has a gasser in the Big Injun sand on the W. R. Sapp farm.

In Geary district, Roane County, the United Fuel Gas Co. has drilled down an old well on the Brown, Goshorn & Swan tract. It is a gasser in the Big Injun sand. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. drilled deeper its test on the Charles Gray farm. It is a gasser in the Gordon sand.

Mingo County

In Harvey district, Mingo County, the Public Gas Corp. has drilled No. 11 on the Logan Cannel Coal Co.'s tract 397 feet deeper, to a total depth of 1,270 feet. At the lower depth it is a gasser good for 750,000 feet.

In the Clay County Pool which started in Henry district, Clay County, and extended into Geary district, Roane County, the South Penn Oil Co. has had remarkable success in developing the O. D. Stockley farm and has yet to have a failure in that pool. Today two new wells were completed both showing very fair. The first, the South Penn Oil Co.'s No. 94, in Geary district, Roane County, was completed in the Injun at 1,789 feet and after shot produced 20 bbls. the first 24 hours. The second, the South Penn Oil Co.'s No. 95, was drilled into the Injun and it flowed 28 bbls. the first 18 hours and is estimated to be a 75-bbl. producer after shot.

Smaller wells were reported completed in Gilmer County. In DeKalb district, the Hope Construction & Refining Co. completed No. 2 on the Hardman farm in the Blue Monday sand showing for a 3-bbl. pumper. This well was drilled down from the Maxon sand. In the same district, also a former Maxon sand well drilled deeper, the McCall Drilling Co. completed its No. 2 lease Riddle Brothers No. 4 to the Blue Monday and it is estimated good for a 2-bbl. producer.

In Liberty district, Marshall County, the Manufacturers Light & Heat Co. drilled deeper a test on the William Renner farm. The production was not increased. In Cameron district, the same company completed a second test on the William Meighen farm. It is a duster in all sands.

Wetzel County

In Clay district, Wetzel County, the Hennen Oil & Gas Co.'s test on the E. R. Kimble farm is a 4-bbl. pumper in the Gordon sand. In Duval district, Lincoln County, the United Fuel Gas Co.'s No. 2,529 is a gasser in the Big Injun sand. In the same district, the Downing Gas Co. has a gasser in the same formation at a second test on the Davis heirs' farm. In Duval district, C. C. Wolfe's second test on the Malinda Meadows farm is a gasser. In Jefferson district, the United Fuel Gas Co. has a gasser at No. 3,909 on the Merriner farm.

In Grant district, Cabell County, the Harshbarger Oil & Gas Co. has a gasser on the C. A. Rodgers farm. In Sheridan district, Calhoun County, B. J. Crowley has completed a test on the W. W. Simmons farm. It is a gasser in the Salt sand. In Lee district, F. F. McIntosh has a gasser in the Big Injun sand on the W. R. Sapp farm. In Geary district, Roane County, the United Fuel Gas Co. has drilled to the Big Injun sand No. 3,866 on the B. Chapman farm. It is a gasser.

On the waters of Mill Stone Creek, Lee district, Calhoun County, the Calhoun Oil & Gas Co. completed a test of the L. G. Garrett farm to the Injun sand and it produced 18 bbls. the first 18 hours. On the waters of Flint Creek, Clay district, Wirt County, Fred L. Andrews has completed his rig and started to drill his test of the Lenora L. Rex farm.

Drilling and Starting Tests

There is considerable new work starting and under way in West Virginia. In

(Continued on Page 125)

THIRTY COMPLETIONS IN KENTUCKY, TWENTY OIL, NINE DRY, ONE GAS

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., June 24.—The various towns and villages in the Tri-County Field of western Kentucky are more interested in the oil and gas development work over the three counties of Ohio, Daviess and Hancock than at any time since the fields became active. Employment offered residents of the three counties and the income derived from the oil industry are held solely responsible by Owensboro, Hartford and Pellville merchants for the splendid business conditions being experienced the past several months. It will now be but a short time until the residents of Owensboro will enjoy the use of natural gas, as the line being constructed from the field to the city limits of Owensboro is due for completion by July 1, and the mains in the city as well as the distribution lines are due to connect with the field line at or before that date.

Large wells are a scarcity in any part of Kentucky at this time. A 100 bbl. producer was found on the Royal lease, in the Friendship Church area of Ohio County.

Eastern Kentucky Wells

Six completions are reported from the eastern Kentucky fields. In Lee-Owsley Counties, District 16, Ashcraft & Banes' No. 3 J. A. Curry pumped 10 bbls. In District 17, the Superior Oil Corp.'s test on the Calmes-Park pumped 5 bbls.

In the Torrent Field of Wolfe County, District 9, Garrison Brothers and others' No. 5 E. B. Roberts farm, pumped 10 bbls. and No. 6 is drilling.

In Lawrence County, District 1, the Warfield Gas Co. drilled in an average gas well on the Belle Queen farm.

In Johnson-Magoffin Counties, District 27, the Magoffin Oil Corp.'s second test on the Williams heirs is a 10-bbl. pumper.

In the Irvine Field, District 7, Estill County, Sherman Smith drilled a duster on the Matt Lowery farm.

Week's Work

A summary of the week's work on the Kentucky field shows 30 completions, 20 producers with an initial production of 678 bbls., 9 dry holes and 1 gas well.

	Comp.	Oil wells	Prod.	Dry	Gas
Ohio	15	13	563	1	1
Daviess	7	3	170	4	0
Lee-Owsley	2	2	15	0	0
Barren	2	0	0	2	0
Wolfe	1	1	10	0	0
Johnson-Magoffin	1	1	10	0	0
Cumberland	1	0	0	1	0
Estill	1	0	0	1	0
Total	30	20	768	9	1

Ohio County Wells

In the Friendship Church are of Ohio County, Ogle & Maxey's No. 4 on the Pay Royal farm is the best well reported for the week, being reported flowing 100 bbls. the first 24 hours, while No. 3, same farm, produced an initial of 70 bbls. These are the largest wells found in that area since Doctor Sirman's good well on the Nancy Farmer lease, same area, No. 16, flowed 300 bbls. initial.

The Ohio Oil Co.'s No. 6 on the W. B. Kelley 105 acres, in the Whittaker Pool, produced an initial of 40 bbls. at a total depth of 600 feet. In this well a string of 555 feet of casing was set and the oil pay found at from 570 to 599 feet.

S. H. Russell and others brought in two small producers in Nos. 4 and 5 on the H. C. Greer 185 acres, in the Deanfield area. In No. 4 a string of 398 feet of casing was set, sand from 411 to 432 feet, total depth 434 feet, the production being 15 bbls. No. 5 contains 398 feet of casing, sand found from 411 to 437 feet, total depth 445 feet, with a production the first 24 hours of 14 bbls.

Stewart & Weir's test on the Joe Norris farm in the Deanfield area about 4 miles east of Whitesville is said to show for 20 bbls. and extends the field some distance.

Leeper, Dahlgren and others' test on the George Wedding farm, north of Ambrose-Weller Pool, practically a wildcat, is rated good for 35 bbls. initial.

(Continued on Page 123)

ENCLOSED

TO KEEP -DIRT OUT -OIL IN

TITUSVILLE OIL COUNTRY MACHINERY BUILT WITH RESERVE RUGGEDNESS

TIMKEN ROLLER BEARINGS, TOO-

YOU men who demand essentials in design as well as quality in engine materials should study this new power plant by Acme. Its crankcase is enclosed—to keep dirt out, and to seal oil in. Its crankshaft is mounted on Timken Roller Bearings.

This is an engine with materials of the highest quality, bearing-ed for a burst of speed or for a steady pull of power—and, with every moving part sealed in a bath of oil, long service is assured.

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TIW-7

TITUSVILLE

12"X12" ROLLER BEARING STEAM ENGINES

MEN KNOWN IN OILDOM

John C. Ford

John C. Ford, general superintendent of the producing department of the Transcontinental Oil Company, started in the oil business as a roustabout for the South Penn Oil Company in the Bradford, Pa., field, 32 years ago. Two years later he was transferred to the southwestern Pennsylvania division of the company as a pumper. After four years' service with the South Penn he took a job as a roustabout for the Carter Oil Company in the Sistersville, W. Va., fields. Two years later he was promoted to field foreman over the Salem, W. Va., district. He held that position five years and in that time he supervised the drilling and operating of 150 Gorman sand wells.

Mr. Ford rejoined the South Penn Oil Company in 1908, assuming charge of all its field operations in the southern half of West Virginia. In the next five years the company completed and operated more than 1,500 oil and gas wells in that district. In 1913 Mr. Ford was sent to Mexico to become general manager of properties owned there by the company's subsidiary, the Penn Mex Fuel Company. He located and drilled the largest producer ever brought in by the company, its No. 2 Alamo on the Tuxpan River, which came in for 75,000 barrels. He and his assistants then obtained the complete right of way for an 8-inch pipe line from the well to the Gulf of Mexico. Ill health in Mr. Ford's family made it necessary for them to leave Mexico and he was transferred back to the United States to become division superintendent of West Virginia operations.

In 1920 Mr. Ford became associated with the Transcontinental Oil Company and went to Tulsa as assistant superintendent of production. He was promoted four years later to his present position.

PERSONAL PARAGRAPHS

George B. Allan, sales engineer of Dallas, Tex., was in Tulsa on company business.

* * *

John M. Crawford, president of the Parkersburg Rig & Reel Company, is on a western trip.

* * *

Harold D. Crawford, of the Parkersburg Rig & Reel Company, has been in Tulsa for a short visit.

* * *

P. W. Woodruff, of the Southern Crude Oil Company, has gone to Battle Creek, Mich., on leave of absence.

* * *

C. B. (Boots) Kennedye, president of the Kennedye-Plumb Corporation, St. Louis, Mo., has been visiting the Mid-Continent fields.

Thomas B. Rea, sales manager, Armstrong Machine Works, Three Rivers, Mich., is in the Mid-Continent Field calling on the trade.

* * *

Cyrus Hutchinson, district representative of Graver Corporation, with headquarters at Fort Worth, Tex., spent last week in Tulsa.

* * *

Col. E. A. Froyd, of Midwest, Wyo., of the engineering force of the Midwest Refining Company, has returned from a trip to Lincoln, Neb.

* * *

L. M. Kiplinger, cashier for the Ohio Oil Company in Casper, Wyo., accompanied by his family, has been visiting relatives in Vincennes, Ind.

* * *

C. Burton Sage, Toledo and Bradford operator, spent a few days looking over the Mount Pleasant Field in Midland and Isabella Counties, Michigan.

* * *

C. J. Anderson, export manager of the Oil Well Supply Company, is spending some weeks in Calgary and Banff, Alberta, before leaving for Tulsa.

* * *

Harvey Stone, formerly of the Hope Oil & Gas Company, Fort Worth, Tex., is now with the Hughes Tool Company, traveling out of the Houston office.

* * *

R. O. Barnsley, operator in the Laredo district, has returned to California after a stay in Southwest Texas, and will leave soon on a trip to Australia.

* * *

F. R. House, formerly with the Imperial Belting Company, has recently been appointed as general field manager in the oil districts, with headquarters at Tulsa.

* * *

J. M. (Jimmie) Charlton, of the land department of the California Company, Dallas, Tex., made a business trip to Amarillo, Tex., and points in Oklahoma during the week.

* * *

Mr. and Mrs. Matt Clay, of Mount Sterling, Ky., spent a few days looking over the Owensboro Field of Kentucky, where Mr. Clay is interested in the Three C's Oil Company.

* * *

Walter C. Carroll, chairman of the board of directors of the Oil Well Supply Company, of Pittsburgh, Pa., made a business trip to Fort Worth, Dallas, and Houston, Tex.

* * *

J. L. Fletcher, of Little Rock, Ark., has been placed in charge of the Arkansas Natural Gas Corporation's newly created department of advertising and publicity at Shreveport, La.

* * *

S. M. Anderson, in charge of the Phillips Petroleum Company office at Fort Worth, Tex., has been transferred to Wichita, Kans., where he was located before taking over the Fort Worth office.

* * *

James Hughes, head of the land department of the White Eagle Oil & Refining Company, Tulsa, was in Fort Worth and Abilene, Tex., on business. L. D. Wask has taken charge of the Abilene office.

* * *

E. A. Kermott, of Kansas City, Mo., vice president in charge of the land and producing departments of the White Eagle Oil & Refining Company, visited the company's Wichita, Kans., offices recently.

* * *

Sol Zarbaugh, of Toledo, Ohio, has been in Casper, Wyo., visiting his niece, Mrs. John McFadyen and his nephew, J. F. (Doc) McMurray, superintendent of the Big Muddy Field for the Ohio Oil Company.

* * *

R. J. Hutchings, of Calgary, Alberta, president of the McLeod Oil Company, and vice president of New McDougall-Segur Oil Company, was recently elected president of the Canadian Manufacturers' Association.

* * *

R. O. Lawrence, of the Sinclair Oil & Gas Company's land department, drove to Fort Worth from Abilene, Tex., bringing W. H. Eyssen, independent operator, of that place, who underwent an operation for appendicitis at a Fort Worth hospital, and is getting along nicely.

Levi Smith, president of the Big Lake Oil Company, has purchased an eight-place Stinson monoplane in which he will make trips to the company's holdings, and to cities over the country where he has business.

* * *

Richard Florian and R. R. Rakestraw, president and vice president respectively of the Western Oil & Refining Company, were recently re-elected at the annual meeting of the company held in Los Angeles, Calif.

* * *

R. D. Bush, California oil and gas supervisor, has been selected by Fred G. Stevenot, state director of natural resources, to head the state division of oil and gas to administer the recently enacted gas conservation laws.

* * *

Harry L. Hogue has returned to Wyoming from the Island of Aruba, Dutch West Indies, where he has been employed by the Pan American Petroleum & Transport Company at the new refinery in process of construction.

* * *

B. M. Nowery, general superintendent of the Palmer Corporation, Shreveport, La., was one of the proud fathers attending the commencement exercises at Notre Dame University, stopping off in Chicago on the way home.

* * *

R. A. Broomfield, president and general manager of the Barnsdall Oil Company of California, and vice president and director of the Barnsdall Corporation, was recently elected to the directorship of General Aviation Corporation, Ltd.

* * *

Frank R. Coates, member of the executive committee of the Henry L. Doherty & Company, and one of those in charge of the oil and natural gas properties of the company, was a recent visitor in Wichita, Kans., and Kansas City, Mo.

* * *

R. T. Herndon, who has been with The Texas Company for 15 years, has been elected vice president of The Texas Company of California and has been appointed director of domestic sales succeeding C. L. Coppage, who recently resigned.

* * *

Walter E. Anderson, former independent service station operator in Chicago but now vice president and general manager of the Old Dutch Refining Company, has arrived in Muskegon, Mich., to complete arrangements for construction of the refining plant to be operated under the new name in the Muskegon Field.

* * *

P. S. Haury, formerly district geologist of the Simms Oil Company, Midland, Tex., and P. H. Jennings, geological scout of the same office, have been transferred to Shawnee, Okla., in which district the company is becoming actively interested. W. S. Blackman, formerly of The Texas Company, is taking Mr. Haury's place at Midland.

* * *

T. A. Pedley, of Denver, Colo., formerly of Owensboro, Ky., who recently resigned with the Midwest Refining Company, with which he had been associated for a number of years, has established an office in Denver. He will devote his time to his private oil interests in Missouri, Wyoming, Texas, Oklahoma and New Mexico.

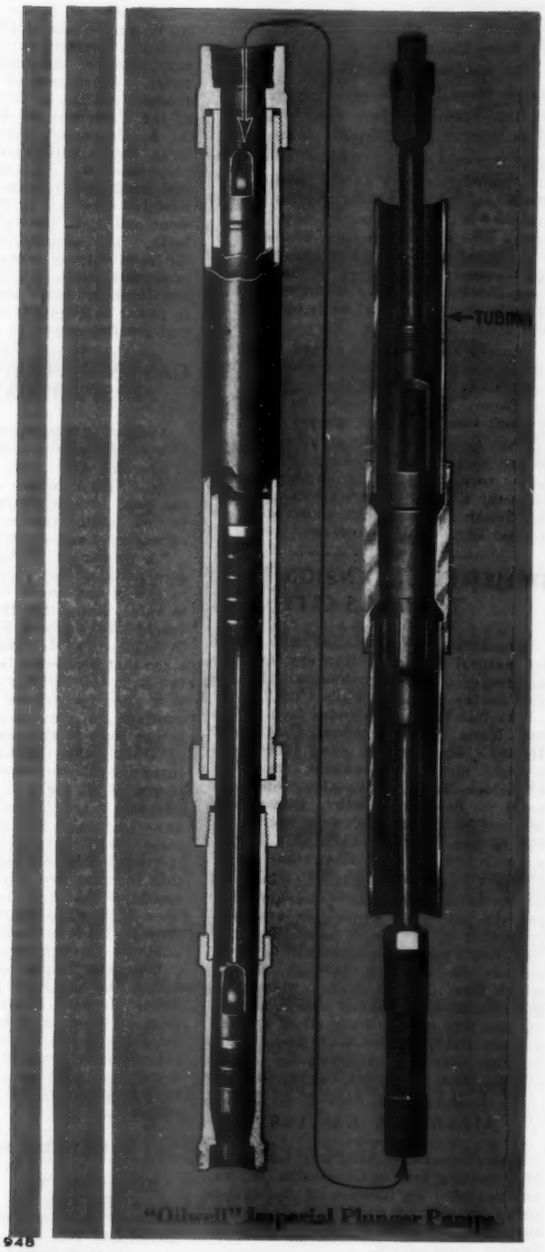
* * *

H. N. Pardee, assistant manager of The Texas Company in the North Central Texas division, has been transferred to the Oklahoma-Kansas division, with headquarters in Tulsa. He will be assistant manager to the division manager. Mr. Pardee was formerly proration umpire of Winkler County. C. B. Williams, of Cisco, district superintendent for The Texas Company, will succeed Mr. Pardee.

* * *

C. R. Messinger, president of the Chain Belt Company, Milwaukee, Wis., was elected a director of the Milwaukee Gas Light Company, part of the American Light & Traction Company of New York. Mr. Messinger is also a director of the Sivyer Steel Castings Company, Federal Malleable Company, and Interstate Drop Forge Company of Milwaukee, which are affiliated with the Chain Belt Company. He is also a director of the Nugent Steel Castings Company of Chicago. The Chain Belt Company operates a plant in Cleveland, Ohio, under the name of the Stearns Conveyor Company.

Designed to meet severe conditions



For more than 20 years "Oilwell" Imperial Plunger Pumps have given satisfactory performance in all fields. Each pump has only two alloy cast iron liners which can be easily replaced on the derrick floor without special tools. The plungers are corrugated, affording a fluid seal which prevents slippage.

Assembled in nine different styles to meet all pumping requirements, in lengths 5-feet 6-inches to 14-feet inclusive. Can be used with 2, 2½, 3 and 4-inch tubing.

LINER BARRELS

"Oilwell" Liner Barrels are ideal pumps for wells of settled production. The Tulsa Style pump is seated by means of three composition rubber seat rings at top of pump. Floating drop in top cage prevents sand from settling back and relieves traveling valve ball from fluid pound. The pump is pulled as a unit. The Bremen style pump is seated on top of working barrel and recommended for wire line pumping. Valves, balls, seats and cups on both style pumps are standard size.

LOAD & SAND CHECK

The "Oilwell" Sand and Load Check, used with Imperial Plunger Pumps, will eliminate your sand troubles on full or part time wells. It relieves the pump of the load, reducing wear on the ball and seat.

WORKING BARRELS

Working Barrels made of either high grade drawn seamless tubing or alloy cast iron. Noted for their "shot-gun" finishes, these barrels are air pressure tested—checked with limit gauges and made in accordance with A. P. I. specifications.

On Display at All "Oilwell" Stores

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Natural Gas Developments

Gas in Red Medina In Randolph Test in Chautauqua Co., N. Y.

RANDOLPH, N. Y., June 25.—Gas is escaping from the well on the Hotchkiss farm in quantities sufficient to make ordinary practices of drilling dangerous. Just how much gas has been struck since the drill penetrated the red Medina sand has not been measured, but operations were shut down until all danger of firing the gas had been removed.

Drillers were changing some of their equipment, preparatory to drilling another 100 feet when it was expected the white Medina sand would be encountered. They installed a dynamo, and electric lights supplant the torches ordinarily employed. The forge has been moved some distance from the well and precautions will be taken to remove every chance of firing the escaping gas.

When the drill went into the red Medina sand there was at once a seepage of gas and as the drilling progressed the gas flow increased.

In the well drilled before on the Hotchkiss farm it was found the red Medina was a trifle more than 80 feet thick and it is expected that a similar depth will be encountered in this well. There is a formation of a few feet between the two sands and then comes the white sand in which it is hoped to locate a gas in commercial quantity.

PERMISSION TO OPERATE BEING TESTED IN COURT

BATON ROUGE, La., June 22.—The injunction suit of the Rayville Gas Co. to restrain the Louisiana Public Service Commission from forcing it to cease operations was taken under advicement by Judge George K. Favrot in district court following a preliminary hearing.

The case is the first of its nature and the decision will determine the power of the commission to force utility companies to obtain permits before starting operations. It is the result of the protest of the Richland Gas Co. of Rayville that the town of 2,000 inhabitants cannot support two gas companies. The Rayville company recently was organized and proposed to supply gas at a cheaper rate. In a hearing before the commission Chairman Francis Williams issued an order directing the Rayville company to cease operations because it had failed to obtain a permit.

The plaintiffs contend the order should have been issued before they started operations and is in violation of the constitution in that it would destroy their business without due process of law.

THREE GAS COMPANIES INCLUDED IN MERGER

VERNON, Tex., June 22.—Announcement of the merging of three gas companies with an aggregate property value of $5,300,000 was announced here by W. R. Stinnett, general manager of the Northwest Texas Gas Co. with headquarters in Vernon. The Northwest Texas company is included in the merger and Stinnett becomes vice president and general manager of the new company.

C. O. Moore of Stamford, formerly head of the Stamford & Western Gas Co., is president of the merged organization. The Northwestern Arkansas Gas Co. is the third company involved.

Holdings of the three companies now total 600 miles in gas lines in Texas, Oklahoma and Arkansas, 200 miles of which are 10-inch lines, 100 miles are 8-inch lines and 300 miles of smaller lines.

SAN FRANCISCO RATES

SAN FRANCISCO, Calif., June 22.—The State Railway Commission has ordered the Pacific Gas & Electric Co., the largest utility company, in northern California, to continue to serve consumers at present rates when natural gas is brought into the San Francisco Bay district from the central part of the State. Gas lines, being constructed at a cost of several millions of dollars, will soon be completed and the company asked permission to institute a higher schedule in view of the increased heat value of a mixture of natural gas and artificial gas which consumers will receive. The commission indicated it would approve the plan of mixing gases, but that until certain rate cases it is now hearing are completed the present schedule will have to remain in force. It is estimated that increased heat units in the mixture will be equivalent to about 12 per cent reduction in consumer rates as long as the present rate schedule is maintained.

SAYS GAS INDUSTRY CAN CLEAN OUR CITIES

There is no insurmountable obstacle to reaching a volume production in the gas industry and taking over the tremendous heating load of the country, according to a statement of M. J. Welsh, vice president of the Empire State Gas & Electric Association, in an address before the annual convention of the association.

Mr. Welsh pointed out that more than half of the smoke and soot that makes a pall over our big cities is due to house furnaces and other small coal burning units, and it is estimated the smoke nuisance costs on the average of about $17 a year per capita in property damage. "Gas in a properly insulated house can be used," said Mr. Welsh, "to fire the furnace at a cost that is not extravagant, and it is the ideal fuel.

"So important an authority as Prof. S. W. Parr, president of the American Chemical Society, says on this subject: 'The pneumonia ratio in congested centers is in direct proportion to the smoke density; the more smoke, the more pneumonia, that the solution of the smoke problem lies in the substitution of smokeless fuels, like gas and coke, for raw coal. The ideal fuel for heating is gas, because of its smokeless combustion, high efficiency, cleanliness and convenience. When gas reaches the stage of volume production it will be the most powerful influence in ridding our cities of the smoke mask which now ruins our health and damages our property.' Is there any insurmountable obstacle to our reaching this volume production and taking over, gradually, perhaps, the home demand as a part of the tremendous heating load of the country? I think not, and I think we shall best get the house heating end of it by talking cleanliness, and health, and sunshine, rather than gas, which is the means to the end.

"We are living in an era of changes. Families and homes are getting smaller, and more and more ready-cooked food is being purchased. This means a definite downward trend in the average domestic consumption. But one big bakery, let us say, or packing houses, will use as much gas as 10,000 homes—if we can sell them the gas."

CANADIAN EXPANSION

CHATHAM, Ontario, June 22.—Announcement has been made of a new issue of 5,000 shares of 6 per cent participating sinking fund preference stock of the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary. The issue is intended to finance necessary extensions of the company's activities.

SOUTHERN CALIFORNIA GAS COMPANY PLANS

SAN FRANCISCO, Calif., June 22.—Substitution of natural for manufactured gas in the Southern San Joaquin Valley was formally proposed by the Southern California Gas Co. at a hearing before the State Railroad Commission.

The company, Roy Bauer, engineer, stated, plans to bring in gas at a double heating capacity from the Kettleman Mills district to Hanford. from which point it would distribute to both domestic and industrial users in the counties of Merced, Madera, Kings, Kern, Tulare and Fresno.

The new gas, Bauer said, would mean a saving of approximately half the price the consumers are paying at the present time, due to the higher heating capacity of 1,150 British thermal units against the 550 B.t.u. now in use.

The gas also would be served to industry in the Mojave Desert region, including cement and potash plants, according to Bauer. The gas would be supplied without increase in the present rates.

The Southern California Gas Co., Bauer said, plans to enrich the gas it serves to Los Angeles at the present time from the Elk Hills district with gas from Kettleman Hills through construction of a pipe line to its compressor.

DOHERTY EXTENSION TO FALLS CITY, NEB.

The Doherty organization will extend its natural gas pipe line system to a number of cities in northeastern Kansas and as far north as Falls City, Neb.

The line is to be extended from Atchison, Kans., in a northwest direction to Horton, Kans., and then practically straight north to Hiawatha and Falls City, Neb. The company also proposes to build a line to Sabetha, Seneca and Marysville, Kans., and this would join the Horton-Hiawatha-Falls City line at a point just north of Hiawatha.

The Cities Service Gas Co. has surveyors in the field, surveying and staking the new line. Franchises are being sought in all of these towns. The pipe line from which these cities will be served extends to Atchison through Leavenworth from Ottawa, Kans., where it is joined with the company's main network of pipe line system from all of the major gas fields in the Southwest, including the large line extending up through Ottawa from the Texas Panhandle.

ALLEGHENY GAS CORP.

The directors of Allegheny Gas Corp., at a meeting held in Charleston, W. Va., recommended an increase of the authorized common stock to 300,000 shares from the present 150,000 shares, to be offered present stockholders.

The gas sales of the corporation for the first four months of 1929 were $153,000, which is expected to show approximately 15 per cent increase in net earnings over the corresponding period of 1928.

The Allegheny Gas Corp. has closed a 10-year contract to supply the Owens Bottle Co. and the Libby-Owens Sheet Glass Co., the plants of both companies being located at Kanawha City, W. Va., with 1,000,000 feet of natural gas per day. Arrangements have been made whereby the Pittsburgh Plate Glass Co. will purchase approximately 1,250,000 feet of natural gas daily from the Upham Gas Co., a subsidiary of the Allegheny Gas Corp.

ALBERTA WASTE GAS COMMISSION

CHATHAM, Ontario, June 22.—The new commission to investigate the waste gas problem in Alberta has been appointed by the Dominion and provincial governments. The Dominion representation consists of Dr. Charles Camsell, deputy minister of mines, as chairman, Dr. A. W. G. Wilson of Ottawa, and Dr. C. C. Ross, formerly in charge of the Calgary office of the department of the interior. Appointees of the Alberta government are Dr. R. C. Wallace, president of the University of Alberta, and Judge A. A. Carpenter, chairman of the Alberta Public Utilities commission. The commission was appointed following a recent conference between Charles Stewart, minister of mines in the federal government and J. E. Brownlee, premier of Alberta. The commission will investigate the feasibility of storing surplus gas in exhausted sands, possibilities of the carbon black industry, new markets for gas in power development and manufacturing, and possible export to the United States.

GAS INDUSTRY GROWTH DISPROVES PREDICTION

Addressing the Southern Gas Association at Memphis, President R. A. Zeigler of Jacksonville, Fla., stated that the large increase in the use of gas during the past several years was due to improved service rate schedules, education of employes and association publicity.

"A prominent statistician," said President Zeigler, "six years ago, in a review of stocks and bonds that would increase in value, stated that the gas industry had reached its peak and would slowly decline in value. The increase in our business since that prediction is our answer. Now the same statistician says gas business is a safe industry to invest in and will continue to grow more rapidly in the future than in the past six years.

"During this six-year period manufactured gas sales for domestic purposes have increased 30 per cent and for industrial purposes nearly 69 per cent, and revenues have increased $125,000,000. Over the same period natural gas revenues have increased $120,000,000. The reasons for this increase are improved service rate schedules that have opened up new avenues of demand, education of employes through trade magazines and association publicity through research work."

President Zeigler declared that sponsoring the chair of gas engineering at Johns Hopkins University is the finest piece of work any association ever accomplished. He recommended that consideration be given to natural gas in the association meetings, since several cities have now changed from manufactured to natural gas.

HUMBLE BUYS GAS

HOUSTON, Tex., June 24.—Humble Oil & Refining Co. has contracted to purchase for its refinery at Baytown 15,000,000 feet of gas daily from the Houston Gulf Gas Co. The contract provides that at the expiration of another contract already in force the refinery will take a maximum of 25,000,000 feet daily.

THREE KANSAS FRANCHISES

The Gas Service Co. has been granted natural gas franchises in three western Kansas towns, Bucklin, Greensburg and Haviland. The franchises at Bucklin and Greensburg were granted by these cities two weeks ago, the Haviland franchise having been approved Monday, June 17. These towns are to be served from an extension to be made off of the main line from the Texas Panhandle at a point near Alva, Okla.

IT HAS BEEN SAID:

"There Must Be a 'Nigger' in the Woodpile Somewhere"

That's what many a power plant owner has said when looking over the fuel and repair bills, and if he looks into the matter it is ten to one that he will discover the "nigger" in the form of gas burners; that is, unless he is already using the Mettler.

METTLER GAS BURNERS HAVE NEVER BEEN SUCCESSFULLY IMITATED

We Welcome an Opportunity to Serve

The outstanding success of the METTLER GAS BURNER is your guarantee that they will eliminate the "nigger in your woodpile" as far as gas burning efficiency is concerned.

The METTLER ENTRAINED COMBUSTION GAS BURNER is the result of 30 years' experience in the application and combustion of gas in boilers, stills and furnaces of all kinds.

Write for complete catalogue and list of users.

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Please quote Prices on the equipment for the following:

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Size..... **Type**.....
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Oct. 5-12, 1929.
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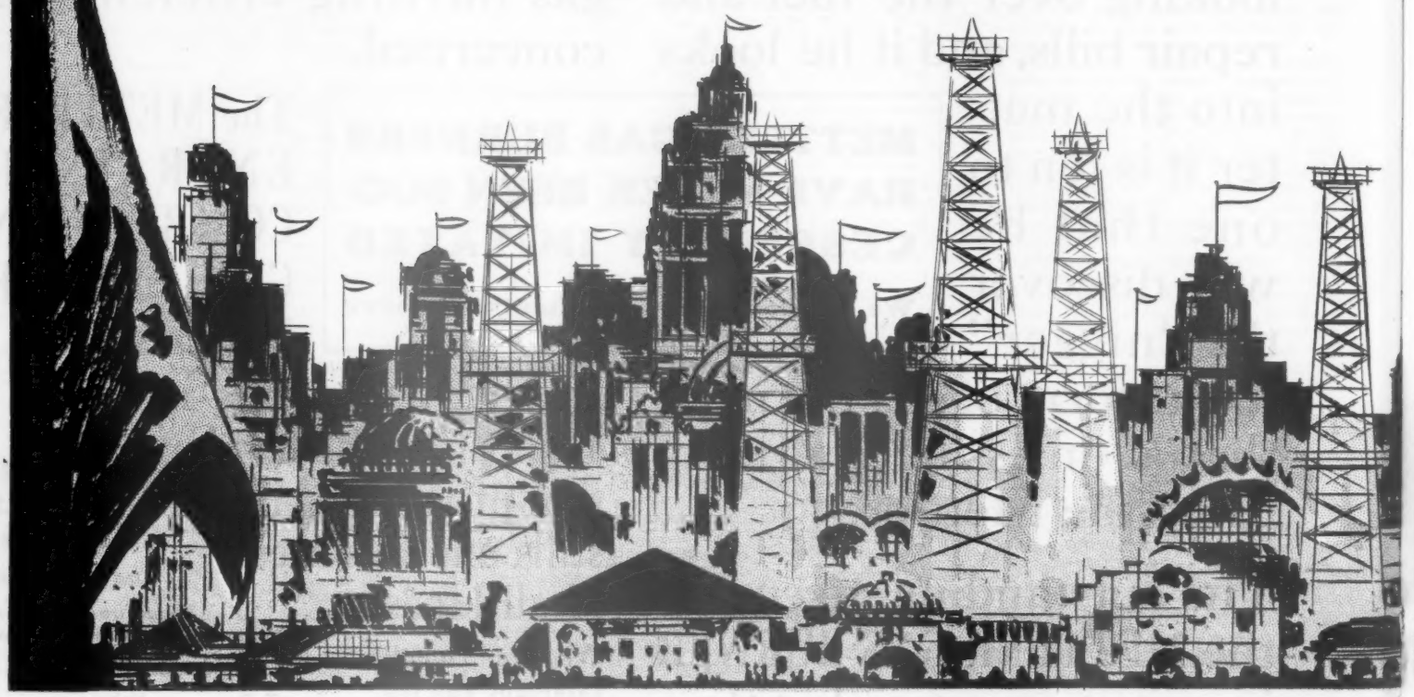

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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

FORMULA FOR RATE OF FLOW

The question has come up at the tank farm about how long it would take a 55,000-bbl. tank full of 38 degree A.P.I. gravity oil to empty itself if the bull plug on the pipe line discharge was screwed off and the 8-inch gate valve opened full so that the oil could flow out into the dike freely. Do you know of any formula that will give rate of flow under such conditions?—P. H. D.

To answer your question it will be necessary to assume one or two factors but they are not material in so far as final results are concerned.

This condition will deal with a constantly varying head of oil and really involves a problem that should be solved by the use of calculus, but it can be estimated closely enough for practical purposes by use of the following formula:

$$t = \frac{2A}{ca\sqrt{2g}}(h^{1/2} - h_2^{1/2})$$

In which

t=time in seconds.

A=area of upper surface of vessel in square feet.

c=coefficient of discharge.

a=area of discharge orifice in square feet.

g=32.2.

h=initial head of fluid in feet.

h_2=final head of fluid in feet.

To solve this problem it is assumed that the diameter of the tank in question is 114 feet or has an area of 10,207 square feet.

The height of the tank would be about 30 feet, but as it would not be completely filled with oil and as the pipe line connection is 1½ to 2 feet above the ground, the initial head is taken as 26 feet.

The area of the 6-inch discharge is taken as .1963 square foot.

The coefficient of discharge is obtained by multiplying the coefficient of velocity by the coefficient of area and in this instance is found to be .82 as the discharge pipe is so short in length that viscosity is not considered.

The square root of the 26-foot head is 5.099, and the final head is taken as 0 feet, so the formula can be written:

$$\frac{2\times10{,}207\times5.099}{.82\times.1963\times8.02} = 80{,}690 \text{ seconds required to empty the tank.}$$

This formula is based upon the flow of water, and 38 gravity oil is .8348 specific gravity, therefore 80,690 seconds should be divided by .8348 and the result is 96,661 seconds, or 26 hours and 51 minutes.

SAFETY IN PULLING WELLS

In the last year I have been making a special effort to have the workmen on the lease which I am superintendent of observe safety first rules. The results have been very good. We have had fewer accidents than ever before. The few accidents that we have had have been almost entirely while pulling wells. I have been thinking of having a set of safety rules typewritten and put up around the derricks where the men can read them and get familiar with them. I wonder if you could help me in getting up the sort of rules I want. I know most of the causes of accidents that occur on well pulling jobs, but there might be some things I would overlook, and besides I would like help in putting these rules in good form. I will be very thankful for any help you can give me along this line.—T. E. N.

It hardly is necessary to say that your idea is an excellent one. It would be a wise thing for every lease superintendent to have such rules posted about the derricks and to see that they are enforced. You probably could do no better than use the rules drafted by H. N. Blakeslee, Petroleum Section representative on the staff of the National Safety Council, in co-operation with the Engineering Committee of the section, under the heading, "Safe Practices in Pulling Wells." These rules follow:

1. Arrange tools properly on floor of rig and keep working space clear of tools not in use.
2. Inspect all tools such as elevators, wrenches, slips and tongs.
3. Inspect derrick for weak or loose material overhead.
4. Inspect bull wheels, bull wheel brake, bull rope and pulling lines.
5. Inspect crown block and lubricate sheave bearings. Be sure crown block is securely fastened.
6. Inspect power, clutch, belts and band wheel.
7. Take rod hanger (grip pipe—rod adjuster) off beam so it cannot fall.
8. Tie or clamp stuffing box to polish rod so it will not slide down polish rod and injure hand.
9. Use care in hooking off beam. Do not throw man off beam.
10. Derrick man must wear safety belt and see that life line is firmly fastened.
11. When hanging rods in derrick see that rods are held securely in rod rack.
12. Watch the rod or the tubing hook. It may catch on the beam or the tubing board.
13. Oil should never be stripped from line or rods with the hands. In stripping use a special stripper made from junk auto casing or old belting.
14. In standing tubing back in derrick keep feet in clear so tubing can't come down on your feet.
15. When holding slack in line use waste, belting or old sack to grip the line so as to keep wickers out of fingers.
16. Keep away from moving bull wheels.
17. Grip bull wheel brake lever near the end and apply pressure gradually. Keep head and body in the clear so brake lever cannot strike you.
18. Stay from between bull ropes at all times. The engine might start and drag you into the bull wheels.
19. Throw the bull rope with the bull rope trip, not a board, a pipe, or a bar.
20. In climbing derricks hold to the side members of the ladders and not the rungs unless the rungs have been secured by a cover strip.
21. The ladder is to use in climbing up or down the derrick. Stay off the cross girts and sway braces except when necessary.
22. Use the ladder. Don't ride the hook or elevators.
23. Stay off bull wheel pins with your feet. These are to pull on with your hands.
24. Hold sand reel lever with left hand. Keep body in the clear. This lever has broken many bones.
25. When stopping for repairs chain down the bull wheel brake lever.
26. Remember the belt clamps stick out a couple of inches, or more, from the belt and can give you a wicked jolt.
27. It is dangerous and bad practice to go through moving belts.
28. Watch yourself in cranking gas engines. Feet too far through spokes may catch you in fly wheel when the engine kicks off.
29. In stopping gas engine use the igniter switch. Gas fires have started when the ignition wire was pulled from the spark plug.
30. Stop gas engine when making repairs to moving parts. The clutch might slip and you'd get hurt.
31. Shut off steam and open bleeder on steam engine so engine can't start up and catch you in the machinery.
32. Open the main switch on electric motors for safety in making repairs.
33. Wear goggles when babbitting, or when cutting wire lines.
34. All portable masts should be well anchored and guyed.
35. Replace all guards after doing repair work. They are for the protection of you and your buddy.
36. Good housekeeping is a part of every job. Clean up before you leave the rig.
37. Smoking around oil rigs is prohibited. It is very dangerous and has caused great losses of life and property.
38. Get first aid for the small cuts and scratches. Avoid blood poisoning.

WHY WAS IT CALLED THAT?

BOOTLEG PACKER

When it is impractical to set a string of casing to shut off water between the lowest upper water sand and the first oil sand, but necessary to run tubing through this open hole to the oil sand, it has been a practice, although not recommended, to make an upturned truncated cone out of canvas or leather with the small end the size of the outside of the tubing. This end is wired to the tubing with the large end of the cone turned upward in the well, and material caving off of the walls of the open hole above it will form a type of packer and prevent the water from the upper sand running down to the oil sand level. The resemblance of the device to a bootleg suggested its name.

BEST TYPE OF LOADING RACK

My company has about decided to build a new tank car loading rack and I have been asked to prepare plans for it. I have been making some inquiries among other engineers concerning the best kind of rack and there seem to be no very definite ideas on the subject, owing, apparently to the absence of standards in the building of both tank cars and loading racks. I would be glad to receive any suggestions you might give me. We receive daily about 10 cars of crude and from 2 to 5 cars of natural gasoline and we load up to 20 cars of gasoline, 3 cars of lubricating oil and 15 cars of fuel oil and gas oil daily. We wish also to reserve a space to load wax in box cars. We never load more than one car of wax a day.—T. S. Y.

Your failure to obtain any definite recommendation as to the best type of loading rack is not difficult to understand. Your question is asked by many companies considering construction of a new loading rack and most of them meet the same scarcity of satisfactory answers that you have met, owing to the thing you yourself mention, absence of standards.

One thing you would have to decide is whether a two-track or one-track loading rack would answer your purpose best. You must decide also whether the wax loading should be done from an extension of your main loading track or from a separate spur. The latter plan, you readily will see, would give you freer movement of cars. Also you must decide whether to load lubricating oil on the separate spur (assuming you conclude to build one) or from the main rack. In asking for suggestions as to the best kind of loading rack you may have desired aid in deciding the very points above mentioned, but local conditions affecting your refinery are involved. For example, the conformation of the ground may be such that it would be much cheaper to build a one-track loading rack than a two-track one. In the construction of the loading rack itself the difference in cost between the one-track and the two-track racks is not large enough to be regarded as an important factor.

With reference to the lack of standards in the building of loading racks and tank cars the National Safety Council had this to say in a recent issue of its Petroleum Section, Great Lakes Division, News Letter:

"If dome steps were a standard height above the rail, with a standard clearance, there would be no trouble in establishing loading rack standards.

"In anticipating future developments of tank cars it seems reasonable to believe that tank cars of larger capacity will be built which will further serve to complicate the problem of building the loading rack to fit all tank cars. Draw bars are a standard height on all cars and it seems possible that other standards could be developed.

"Why not develop standards for the following? 1. Height of tank car dome steps above the rail. 2. Distance of the outer edge of the tank car dome steps from the midline of the tank car. 3. Ladders and dome steps for each side of the tank car dome. 4. Height of tank car walkway alongside of the tank car. 5. A proper and safe position for placard holders. 6. Loading rack specifications to fit standardized tank cars. (Note: Specifications on the foregoing to be the same for tank cars of all capacities.)

"It is not expected to revolutionize tank car building, but if no steps are taken to establish certain standards, the line up of tank cars at our loading racks and bulk marketing plants will, in the future, present greater problems in practical and safe loading and unloading."

EQUIPMENT AND SUPPLIES

INNOVATION IN WEIGHT INDICATOR RECORDERS

An innovation in weight indicator recorders has been introduced by the Martin-Loomis Corp., Long Beach, Calif., in its "Outside-in Chart Recorder." The ease of reading them is apparent. The time record for all operations usually starts from down time to down time. In other words, the time reading is made on or close to the zero pressure circle.

The chart's circumference is 4½ times more at the zero pressure circle than on the usual type of chart. Consequently time readings may be much more easily made. As most operations take place below the 50-pound circle and only occasional readings are necessary above this point, the accuracy of the whole chart is increased and the separation of operations is made more distinct.

The "Outside-in Chart Recorder" is now standard equipment on all Martin-Loomis automatic recording weight indicators. The former type of recorder may be changed over to the outside-in type at a nominal cost. The new Martin-Loomis chart may be used on either the new or former type recorders. It is graduated to read in two colors both from the inside out and from the outside in so that readings may be made without confusion, no matter what type recorder is used.

AMERICAN WELL WORKS OFFERS NEW TURBINES

The American Well Works, Aurora, Ill., announces new 6-inch and 8-inch deep well turbines to fit smaller bored wells. The deep well turbine consists of the turbine head proper, which is the driving unit, the supporting pipe, which encloses the driving shaft, and the turbine itself, which consists of the number of stages necessary for the specific requirements.

The turbine head consists of the vertical motor mounted on a rigid and compact base. The thrust bearing of the motor is designed to carry the load of the line shaft and impellers. To the turbine head is attached the supporting pipe, to the lower end of which is attached the turbine proper.

The turbine proper is a special style of the turbine type of centrifugal. All bearings are oil lubricated by gravity feed from the surface, the gravity feed being electrically controlled. Provision is made for complete drainage of all waste oil and water leakage and the discharge pipe is located above the floor level, which permits of easy access.

NEW CEMENT PLANT IS BUILT

Anticipation of the demand for speed and safety in concrete construction has been the guiding motive in the Missouri Portland Cement Co.'s program of expansion, according to its officials. The $2,500,000 plant built by the Missouri Portland Cement Co. in St. Louis, Mo., was constructed solely for the manufacture of Prestolith Velo cement. Prestolith Velo cement concrete is said to attain in 24 hours the strength required of normal Portland cement concrete in 28 days. Prestolith Velo cement has normal initial and final setting time, is readily workable when used in reinforcing and uses less water than normal Portland cement. A pavement, constructed with Prestolith Velo cement concrete, is ready for full traffic 24 hours after it is laid, the manufacturing company says. The new plant is said to be the first one designed exclusively for the production of high early strength cement.

NEW CASING PROTECTOR IS PUT ON THE MARKET

The MacClatchie Manufacturing Co., Compton, Calif., has introduced "Pipe-tectos," a casing protector made up of a protector rubber, a slotted steel wedge for tightening, and a length of soft steel wire. The rubber has two deep parallel grooves around its circumference and is molded in one piece with a slit down one side.

Let to right: Soft steel wire. One-piece molded protector rubber. Tapered and slotted steel wedge for tightening.

A 6-ply section of fabric, such as is used in automobile tires, is molded into the inner side of the rubber, preventing the wires from cutting through, no matter how tightly they are drawn. Any good grade of bailing wire may be used.

No special tools are needed for installation, nor is it necessary to break a tool joint to place "Pipe-tectos" on the stands. There is no expansion involved in installing these new protectors. The rubber is in its natural state when put into the hole. An ordinary hammer is the only tool needed.

Should a wire break in the hole, the grip of the "Pipe-tecto" on the pipe is not loosened, as only two turns of wire are lost. Locked securely, a MacClatchie protector cannot jump a tool joint, it is said. It protects that portion of the pipe on which it is placed until it is taken off. During the tests to which they have been subjected in California fields, "Pipe-tectos," it is said, have never been known to "bunch."

BROWN DEVISES METHOD OF INSTALLING METER

The Brown Instrument Co., Philadelphia, Pa., has worked out an ingenious method of installing its CO_2 apparatus, working on the thermal conductivity principle. In this system of analyzing gases the relative capacity of air to conduct heat as compared with the gas to be analyzed is used to operate electrical indicating and recording instruments calibrated directly in per cent CO_2.

A primary filter consisting of perforated metal supporting asbestos cloth, projects into the flue or furnace. The pipe supporting this primary filter slopes downwards from the filter so moisture is drained off. The sampling line runs directly down to a U-tube drain, which collects excess moisture and acid. The gas then passes through a condenser where it is cooled to prevent any accumulation of moisture in the analysis cell.

A union connection is made at the sampling tube so the primary filter can be blown out occasionally. A secondary filter consisting of a container with steel wool and cotton is placed in the line in front of the cell.

The thermal conductivity cell contains four platinum filaments of comparatively heavy wire mounted in gold-plated cells with gold-lined passages. Two of the cells contain air. The other two contain gas to be analyzed, the thermal conductivity of which is to be compared to air. From the cell a five-wire cable runs to indicating or recording instruments calibrated directly in per cent CO_2.

This new piping arrangement, with the improved condenser, filter and cell assembly, marks an advance in the perfection of CO_2 analyzing apparatus operating on the thermal conductivity principle.

CHANGES IN RYERSON'S PERSONNEL ANNOUNCED

Changes in the executive staff of Joseph T. Ryerson & Son, Inc., Chicago, are announced by Edward L. Ryerson, Jr., president, who says they were prompted by the increased number of plants and the growing diversity of the company's products.

A. M. Mueller, associated with the firm 30 years in the accounting and sales departments, becomes assistant secretary and member of the board of directors. Mr. Mueller was manager of the St. Louis plant from 1914 to 1917 and later general manager of sales. H. B. Ressler succeeds Mr. Mueller as general manager of sales. He has a record of 25 years as manager of the mill order department and manager of the St. Louis plant. Robert C. Ross is advanced from general traffic manager to assistant to the president in charge of plant operations. This move will combine all operating and service functions under one head and make for even better service with economy. Mr. Ross has had 26 years experience in the operating, service and traffic departments. From 1923 to 1929 he was chairman of the Midwest Shippers Advisory Board in which capacity he aided shippers in getting better freight service and in adjusting differences between shipper and carrier.

William H. Bryant, for 23 years with the Ryerson company, becomes Chicago sales manager in charge of the country and city store sales. He was formerly assistant manager of sales in charge of the Chicago country territory. Guy H. Rumpf, formerly manager of plant operations, succeeds Mr. Ressler as manager of the St. Louis plant. He has been with the house for 17 years. Harry W. Trelesven, with the firm 20 years is made assistant treasurer.

OILWELL PUMPING ADJUSTERS

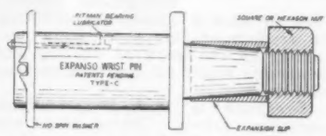
Oilwell pumping adjusters, manufactured by the Oil Well Supply Co., Pittsburgh, are made in rigid and flexible types. They are of simple design and constructed to withstand severe operating conditions. The rigid type is furnished with single or double screw yoke. The flexible type is furnished with single or double screw yoke with three-fourths inch wire rope, double screw yoke only with 1-inch wire rope. Smooth, steady performance is said to be assured with this installation.

KONSET SHIPPED TO MEXICO

The Sullivan Co., Memphis, Tenn., manufacturer of Konset, recently shipped another carload of this reagent for hardening cement quickly to Mexico. Cement treated with Konset hardens in one to three days, as compared with 10 to 20 days for untreated cement. This effects a saving of time in completing a well and is of special advantage in the case of a well offsetting a big producer. Konset is called a catalyst, since it brings about a reaction but does not enter as a compound in the product.

IMPROVED WRIST-PIN ANNOUNCED BY BAIRD

The Expanso wrist pin, an improved type of wrist pin for use on drilling and pumping rigs in any standard crank hole is being manufactured and distributed by the Baird Tool Works, Inc., Tulsa. This wrist pin has a tapered shank onto which an internally tapered slip is expanded by setting up the nut, giving a mechanical adjustment that automatically takes up ordinary differences in diameter between the wrist pin shank and the crank hole.



A means for force feed lubrication with grease delivery directly into the pitman's bearing travel is furnished in the construction; also a front washer that locks in position by the cotter pin.

In making the installation the wrist pin is pushed into the crank hole, no sledging or driving being necessary, the internally tapered slip then being inserted from the back. As the nut is screwed up the slip is forced up the tapered shank, completely filling the crank hole and eliminating all chance for loosening as an up-and-down and horizontal tightening is effected.

TRADE LITERATURE RECEIVED

"Recently a change in our accounting system demanded the transfer of accounts into a new set of books," says the June "Sivyer Reports," published by the Sivyer Steel Casting Co., Milwaukee, Wis. "We discovered that 51 of today's active accounts placed their first orders during Sivyer's first five years of existence, 1909 to 1914. We are proud of this record."

Advantages of the K-P super-imposed head are pointed out in a bulletin issued by the Kennedye-Plumb Corp., St. Louis, Mo.

The Worthington News, published by the Worthington Pump & Machinery Corp., Harrison, N. J., announces a contest for a slogan aptly describing Worthington products.

Catalog No. FA-1, being mailed by the Mine Safety Appliances Co., Pittsburgh, Pa., describes and illustrates a wide variety of first-aid materials and devices.

The Connersville Blower Co., Connersville, Ind., is sending out a bulletin on Victor gas boosters for booster service on distribution systems, gas-burning furnaces and ovens and processes where clean gas is handled.

A bulletin sent out by the Lincoln Electric Co., Cleveland, Ohio, is devoted to the Lincoln across-the-line safety starter.

The Grasselli Chemical Co., Cleveland, Ohio, has issued a booklet on standards in wood preservation, "Looking Ahead 20 Years in Wood Utility."

CLINE SEPARATOR ON MARKET

William Cline of Logan, Ohio, is the inventor of the Cline automatic gas separator now being manufactured by Westerman Brothers, Bremen, Ohio. Production was begun last December and more than 60 of the traps are already in operation in Ohio, Michigan and West Virginia. The Cline separator allows a certain fixed pressure to be maintained at all times for either flowing or pumping wells, so the gas can be marketed. All working parts except the float are on the outside, which permits ready cleaning and replacing of valves, etc.

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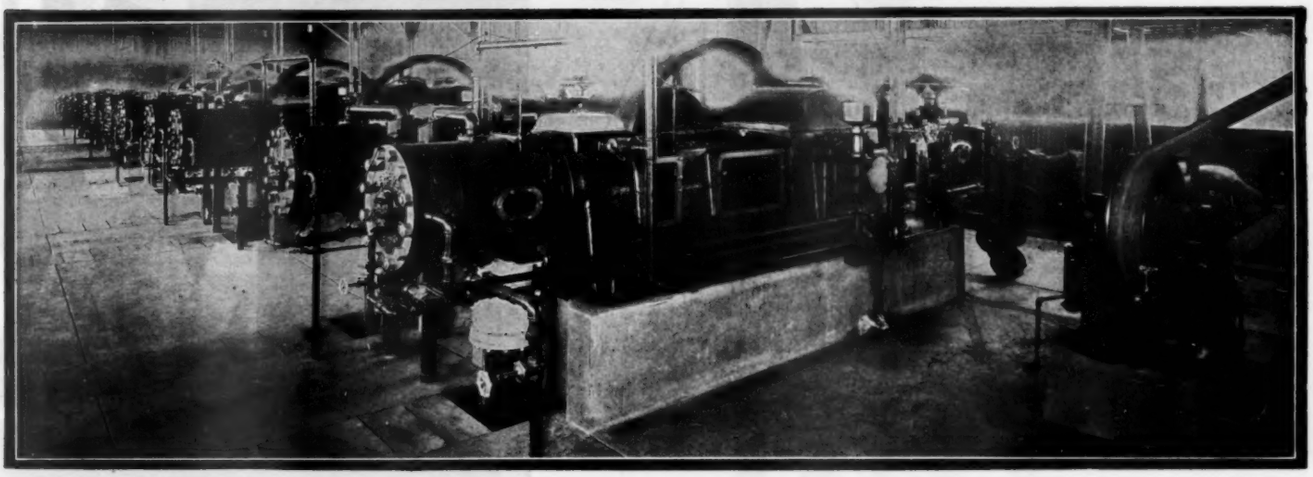
1939
1929



A Battery of Bessemer Type Ten Compressors in The Magnolia Petroleum Co's Gasoline Plant at Pampa, Tex.

ON AND ON through the years you will find your Bessemers rendering that stellar service which has marked Bessemer performance for three decades.

The Bessemer you buy in 1929 will still be young in 1939 and in all probability will be a steady worker in 1949—and after! A Bessemer remains impervious to the ravages of time and service during their decades of unfaltering performance. Years of running time are built into every part, so that servicing and replacement are held at the minimum.

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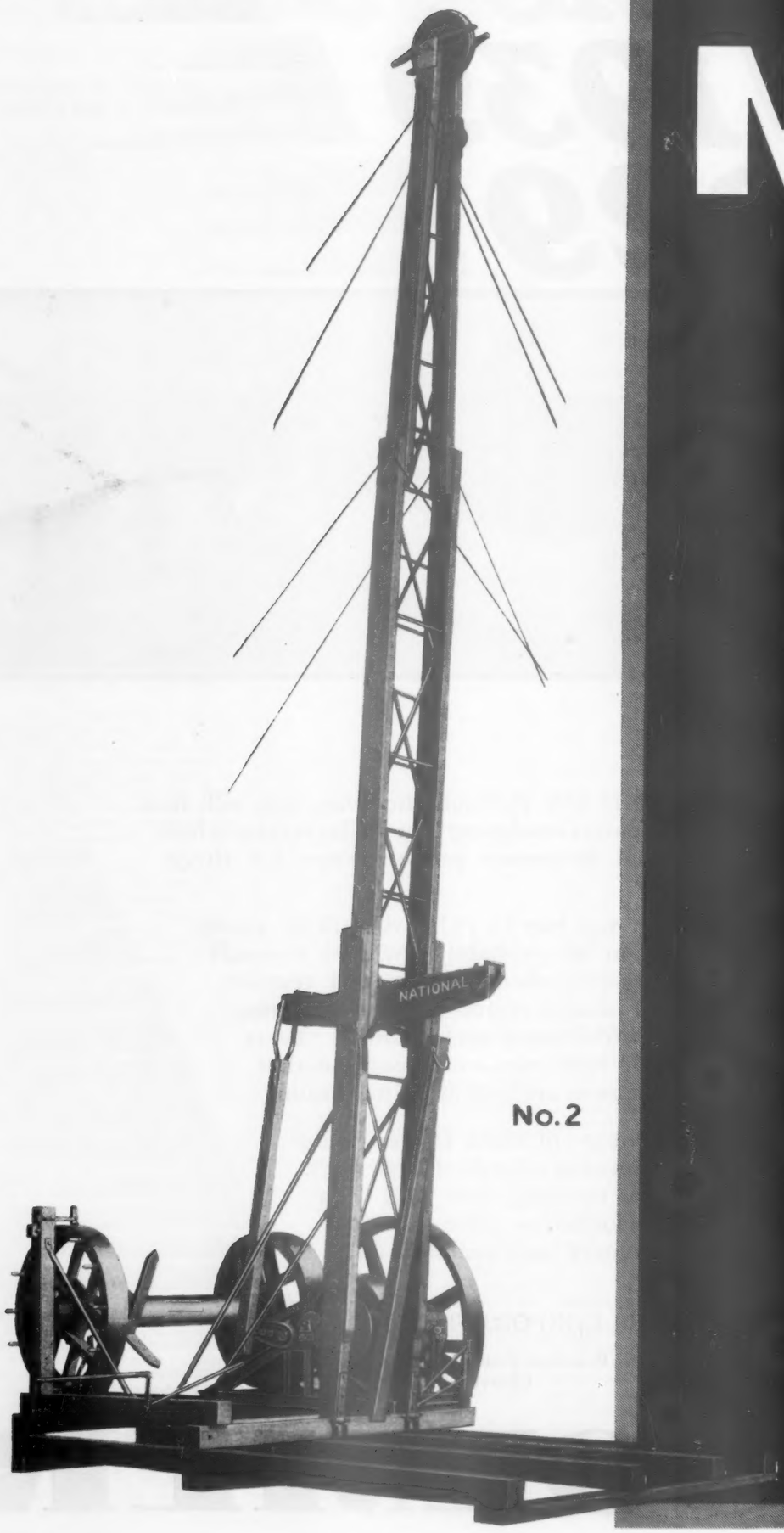

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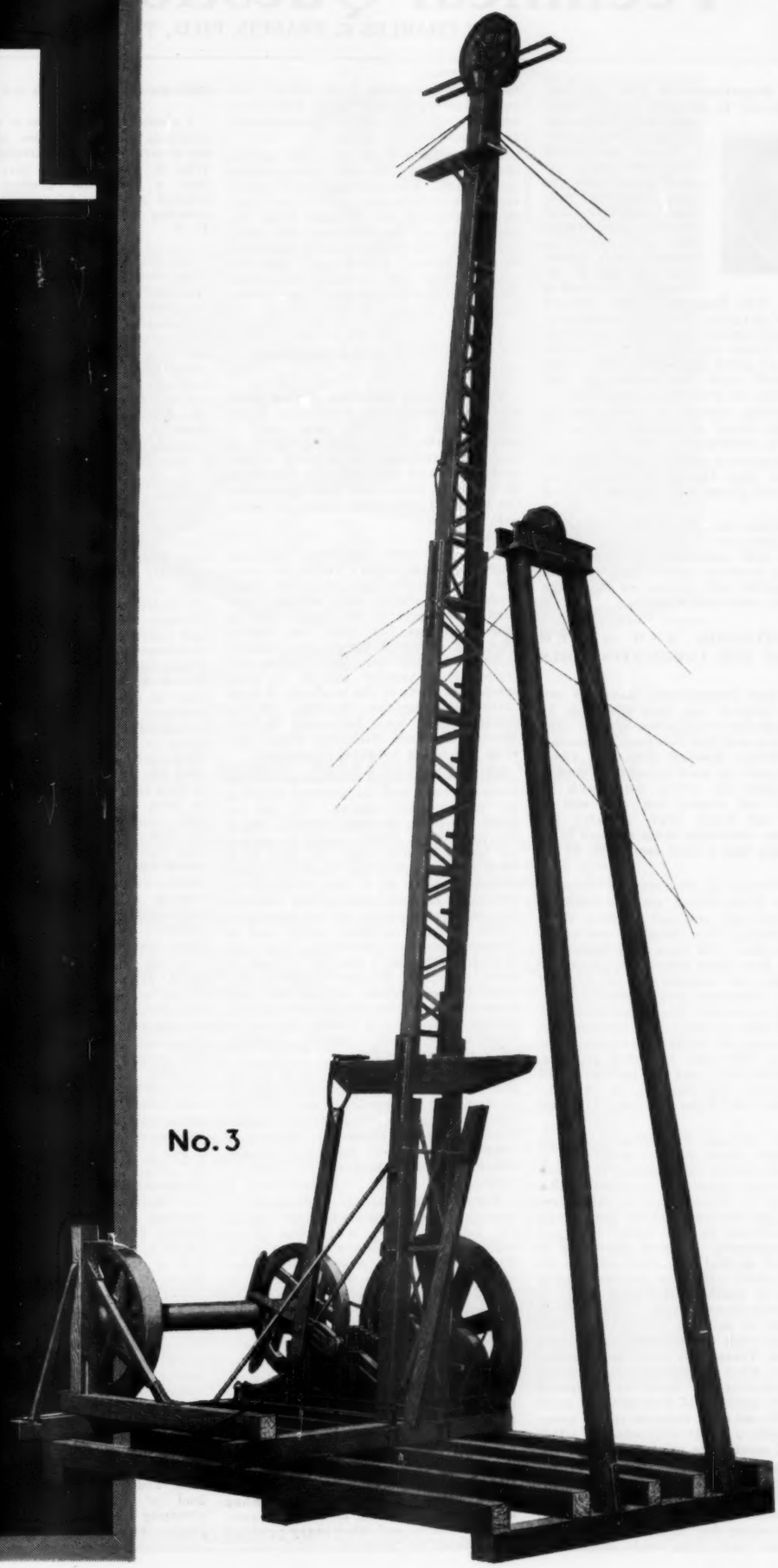

No. 3

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

PENNSYLVANIA AND OTHER CRUDES FOR LUBRICATING OILS

Is a pure Pennsylvania motor oil better for airplane use than one made by large marketers from other crudes? Tell me frankly will Mid-Continent, Wyoming, West Texas, Kansas and Gulf Coast crudes make as good an oil as Pennsylvania crude for severe duty, such as airplane and tractor use, and will it carbon and break down quicker? Information obtainable from refiners is so conflicting that I want facts.—W. H. R.

Lubricating oil that may be classified as pure Pennsylvania grade is obtained from crude oil produced in New York, Pennsylvania, West Virginia, and southeastern Ohio. The total daily crude production from these districts is about 67,000 bbls., and possibly 20 per cent of this is converted into lubricating oil. This is equivalent to approximately 4,891,000 bbls. a year. The total production of crude oil in the United States for the year 1928 was, in round numbers, 898,000,000 bbls., and the lubricating oil made from this quantity of oil was equivalent to 3.8 per cent, or 34,084,000 bbls.

When refining Pennsylvania oil, or any other crude oil, the properties of the final product will depend to considerable extent upon the conditions under which it is refined; that is the degree of the purification. There are several oils, produced in the states that you have mentioned. Some of these may be processed so that a product will be obtained which will have properties quite similar to another lubricating oil made from Pennsylvania crude. Space is not available to mention all such oils, but Burbank crude in Oklahoma and Ranger crude in Texas, will serve as examples. Further, when we consider the quantity of lubricating oil made as compared with the quantity of Pennsylvania crude available, we must conclude that a greater proportion of the lubricating oil which is used must have originated elsewhere.

Service tests, made under identical conditions, are considered to be the best method of determining the value of oils of different origin. It cannot be said with certainty that lubricating oils which have been made from crude obtained in the states you have listed above, will produce more carbon or break down more readily than the oil of Pennsylvania grade under severe duty.

In a general way we are of the opinion that lubricating oils made from paraffin base crudes, Pennsylvania and others, show a higher carbon residue test than do the similar oils obtained from the naphthenic or asphaltic base oils originating in the Mid-Continent and Gulf Coast districts. The carbon from the paraffin base oils is hard while that from the asphaltic and naphthenic crudes is soft and flaky.

REFINING CUTS DEFINED

When refining petroleum certain products are separated and called cuts. What are the real names for these cuts? I find that they are called by different names in different places; this is especially true of the first ones separated, so I would appreciate your giving me the technical or correct name for each. —T. S. A.

I was not aware that there was any confusion at this time about the various products that are separated from crude oil. Of course there may be some slight differences in the names used in some refineries but these are seldom very far removed from the common terms and when there is a marked difference it is usually related to some special use made of the products. A brief outline showing the meaning of the common cuts may be found in the Bureau of Mines Technical Paper 431, from which the following is quoted.

The lowest boiling component of the average crude may be grouped together as "gasoline and naptha." To the refiner, the term "gasoline" usually means the product as finally ready to market for use as motor fuel. It may be a "straight-run" distillate from the crude oil, or perhaps more often, a blend of distillates from several crudes containing various amounts of "pressure distillate" from "cracking stills" and of "natural gasoline" recovered from natural gas. "Naptha" also is a term of many meanings. It may signify a specially refined product for use as a solvent—"painters' naphtha" or "rubber-makers' naphtha"—or it may refer to the unrefined or partly refined distillate from the crude stills.

The term "gasoline" is used by the Bureau of Mines to designate a finished product that is practically equal in distillation range to "United States Government motor gasoline." The term "naphtha" is used to designate only distillates from the still or fractionating tower.

Kerosene is generally understood to comprise the compounds just above the boiling range of gasoline. As a matter of fact, however, a good kerosene often includes some products that might be included in motor gasoline, as well as those with higher boiling points. Kerosene made from some crudes comprises compounds that are almost entirely within the upper part of the boiling range of motor gasoline.

Gas oil is too viscous or too high-boiling to be included in gasoline or kerosene and is not viscous enough for refining to commercial lubricating oil.

Lubricating distillate is the distillate from the crude that is refined to make commercial lubricating oils. The continuous-distillation process has not yet been perfected for refining lubricating oil, so that lubricating distillates, waxes, cylinder stocks, and other heavy products are grouped as "residuum."

ORIGIN OF PETROLEUM CRACKING

I should like to obtain a reliable reference to the first mention of the cracking of petroleum or a petroleum distillate. Who is considered to have discovered that a petroleum product could be cracked according to our present understanding of the cracking processes?—E. T.

All of the books on petroleum refining gives some mention to the early work on cracking. Among the recent articles on the subject you will be interested in the contribution by E. Owen, Developments in Vapor Phase Oil Cracking, in Chemical and Metallurgical Engineering, October, 1928, p. 610, in which is given an outline of some of the pioneer experiments. There was an article, under similar title, in The Oil and Gas Journal, April 25, 1929, by C. R. Wagner, and the part about the early history of cracking is reproduced here.

To those of us who have always thought of cracking as having been accidentally discovered in 1861 by a careless stillman in a New Jersey refinery it comes as a decided shock to realize that Dalton in 1809 conducted rather extensive experiments on the decomposition of hydrocarbon vapors by means of electric sparks. Sixteen years later Faraday worked on the same problem and isolated benzene and several of the unsaturated hydrocarbons. In 1855 Professor Silliman made "oil gas" from petroleum hydrocarbons by high temperature cracking. His classic researches indicated many of the possibilities of petroleum chemistry, the realization of which in practice was not effected until comparatively recent times. Berthelot's work on the decomposition of petroleum at high temperatures was published prior to 1870, and Thorpe and Young began their work at least as early as 1865. In those early days, however, the demand was for lamp oil and not the light motor fuel fractions we prize so highly today. In 1862 we find Breitenlohner winning a grand prize at the London Industrial Exposition for such a product produced by a high temperature vapor phase cracking process.

In the shortage of coal tar products which followed upon the early stages of the development of the dyestuff industry Nikiforoff found an incentive to develop his process for the manufacture of aromatic hydrocarbons from petroleum. The growth of the American coal tar industry, however, relegated this process and others of a similar nature to the scrap heap, though they have an important place in the history of the development of the cracking industry.

For a very comprehensive resume of the situation the reader is referred to an article reprinted in Journal of Industrial and Engineering Chemistry by Lomax, Dunstan & Thole (J. Inst. Pet. Tech. 3, 36-120, 1916) December—J. Ind. Eng. Chem. 9, 879-902 (1917), and to Bulletin 114 of the United States Bureau of Mines.

It appears that Cowper-Coles in 1906 was the first person to design and operate a cracking process for the production of a light motor fuel. He passed heavy vapors through small metal tubes heated to high temperatures and then condensed the cracked vapors, and he appears to have noted some of the problems in vapor phase cracking which evidently escaped later investigators. Noad, Sabatier, Testelin & Renard, Laing, Greenstreet, Lamplough, Turner, Hall and others rapidly followed the lead of Cowper-Coles, all of them strangely enough working in the vapor phase. The development of the Burton process of liquid phase cracking by the Standard Oil Co. of Indiana for the manufacture of motor fuel abruptly changed the course of events in this field. Hall's process in England and Rittman's in America were able to make some headway during the war, but the return to peace caused their abandonment.

SPONTANEOUS COMBUSTION AND KNOCKING

Have you any explanation for the fact that some cars knock when the engine gets hot on long distance drives? My car is a . . . . . Which has been driven only 3,000 miles and the knocking is very strong after about 100 miles of continuous driving.—W. T. H.

Mechanical conditions are frequently the cause for an engine overheating; among these you may have a fan belt which is not properly adjusted, there may be some lag at the water pump, or for one reason or another there is poor circulation. If you are not using a high grade antiknock gasoline you should try one in this car. A poor grade of lubricating oil will cause trouble of this nature.

An article in The Petroleum Times, April 27, 1929, from Petroleum, gives information about the spontaneous combustion temperatures of a number of fuels, and suggests that this property should be considered as the source of knocking, such as you mention. The material below is quoted from this article.

Overheating of the engine or the process of compression alone may generate a temperature causing spontaneous combustion of an oil-vapor and air mixture, resulting in premature ignition of the power mixture before the piston has reached its proper height and before the spark can perform its function of exploding the mixture. The consequence is knocking, which is the audible symptom of the piston being arrested in its upward course and forced downwards instead. The resulting irregular explosions, during which the temperature varies considerably, prevent complete combustion of the lubricating oil, with consequent formation of carbon and soot. These, in turn, are responsible for the hard crust found at the base of pistons, the loosening and rattling of valves, and the sooting-up of plugs.

Spontaneous combustion temperatures:

	Temperature Centigrade
Motor lubricating oil 174° Centigrade flashpoint	226°
Motor lubricating oil 193° Centigrade flashpoint	244°
Crude oil West American seaboard	233.8°
Crude oil from Mexico	245°
Gas oil	242°
Gas oil	247.5°
Kerosene	283.8°
Benzol of —10° Centigrade flashpoint	490°
Heavy benzol of +43° Centigrade flashpoint	460°
Gasoline	330°
Castor oil	326.3°

The above list, compiled by Doctor Eichwald of Hamburg, on the basis of tests made respectively by the technologists Jentzsch and Krupp, and published in Petroleum, reveals the fact, which may not have received the attention it merits, that the spontaneous combustion point of lubricating oil is shown to be lower than that of motor fuels such as gasoline and benzol. The point of spontaneous combustion is the temperature at which a gaseous mixture, e.g., oil-vapor and air, ignites automatically without coming in contact with a flame. Failure to differentiate between spontaneous combustion point and flash-point has led to many explosions in compressors.

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Magnetometer Results in Mississippi

Survey Shows the State Offers Considerable Area That Would Be Worthy of More Detailed Work

By L. Spraragen

The first article on the magnetometer survey of Mississippi was published in The Oil and Gas Journal of May 16, the second in the issue of June 6.

Maben

" . . . No oil indications have been noted in the vicinity, (about 3½ miles north of Maben, Webster County) but the structural conditions are favorable for oil accumulation, and a deep well might reach the Cretaceous carboniferous contact which offers hope of oil and gas . . . "

The magnetometer survey indicates that this anticlinal structure would occur on the sides of the magnetic low at Walthall.

Kosciusko

Structural conditions in the vicinity of Kosciusko are favorable for oil accumulation. The magnetometer survey shows Kosciusko to be on a magnetic high.

Winona

"In the vicinity of Winona, Montgomery County, at the intersection of the Illinois Central and Southern Railroads, a considerable disturbance of the strata is apparent . . . Four miles east of Winona, the formations are seen to dip at a rate of 262 feet to the mile toward the west. Two miles west of Winona these red Claiborne beds have a distinctly eastern dip . . . At all events, the bending of the strata between Elliott, 3½ miles east of Winona, and a point 2 miles west of Winona, is evident, and careful and detailed prospecting would probably discover encouraging anticlinal structures. The deepest well so far drilled in the State was drilled in 1920, 6 miles northeast of Winona, on the evidence of a good reverse dip but was abandoned at 4,260 feet."

Plate 1 shows Winona to be on the axis of a decided north-south high magnetic trend. Plate 2 shows Winona to be on a nose extending south toward Vaiden.

Meridian

"An examination of a recent geological map of Mississippi will show at Meridian a small area of Woods Bluff Marls of the Wilcox, surrounded by later formations. This 'island' is suggestive of an anticlinal structure at that point . . . This anticline, if confirmed by more detailed survey, is worthy, of investigation."

Plate 2 shows that though Meridian in located in a region generally low it is somewhat higher magnetically than the area north and south.

Jackson Area

United States Geological Survey Bulletin 641-D, "Structure of the Vicksburg-Jackson Area, Mississippi, with Special Reference to Oil and Gas," describes the nature of the structural deformations in the Jackson area.

"According to this report the city of Jackson is situated 'near the center of a broad, gentle fold, which shows a dome-like arch in cross section from northwest to southeast, and a terrace-like form from the northeast to southwest' . . .

"This arch is several miles in diameter and the northern edge of the town of Jackson is a little south of the center."

Two wells, one about 4 miles northwest of Jackson, and the second about 4 miles due north of the city "were abandoned at a little more than 3,000 feet without finding oil . . .

" . . . Both of these wells stopped in the Selma chalk. The Tuscaloosa sands, 300 to 400 feet below the Selma chalk, is the horizon corresponding to the Woodbine sand of the North Louisiana fields and oil was not expected in the Jackson area until that horizon was reached. It can therefore be stated with considerable assurance that neither of these wells went deep enough to test the possibilities of this field."

An inspection of Plates 1 and 2 reveals an indication of unusual magnetic disturbance in the vicinity of Jackson and the reader can compare the magnetic results with the geological description briefly given above.

Vicksburg Area

Bulletin 21 says:

"The folding in the Vicksburg area is of a different nature than the doming up of the Jackson area . . . "

Two wells were drilled on this structure. One was abandoned at 3,462 feet and the other at 2,630 feet.

The magnetometer shows this entire area to be a region of low magnetic intensity.

South Mississippi

" . . . In the Catahoula formation some minor undulations have been observed, but for the most part not far south of its contact with the Vicksburg limestone. One such structure is noticeable 4 or 5 miles north of Crystal Springs, where County Line Bridge spans a deep cut of the railroad. Here the Catahoula sandstone is seen to form a distinct arch, dipping north and south from the bridge . . . "

The magnetometer results indicate that this structure is part of the general magnetic high including Jackson.

Discussion of the Profiles

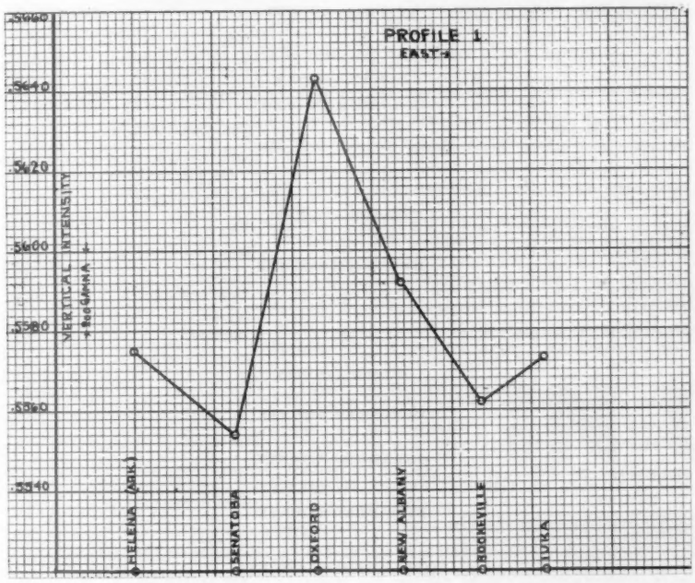
Eleven profiles of vertical magnetic intensities across the State are presented in order to more clearly present the magnetic relief.

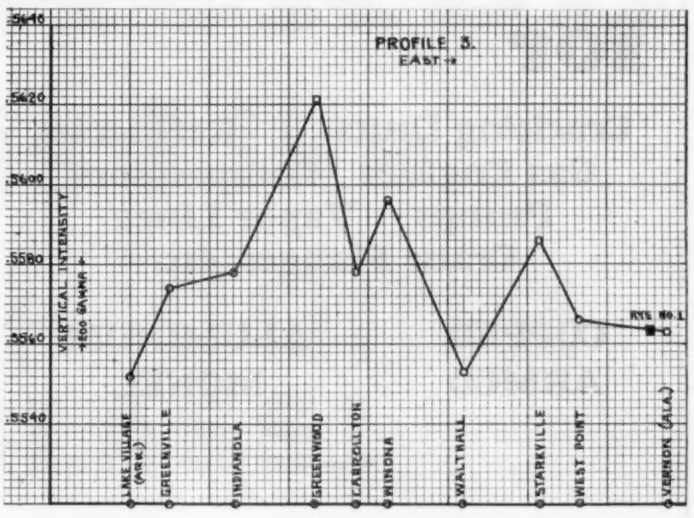
Profiles 1 to 7 inclusive are west to east traverses and Profiles 8 to 11 inclusive are south to north traverses.

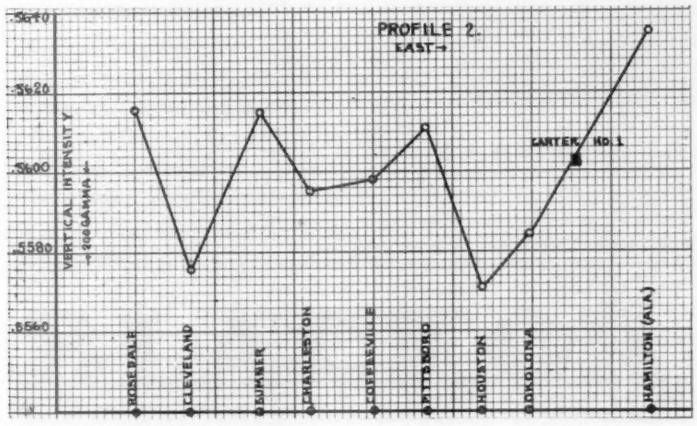
In addition two other profiles are presented as parts of Figures 5 and 6.

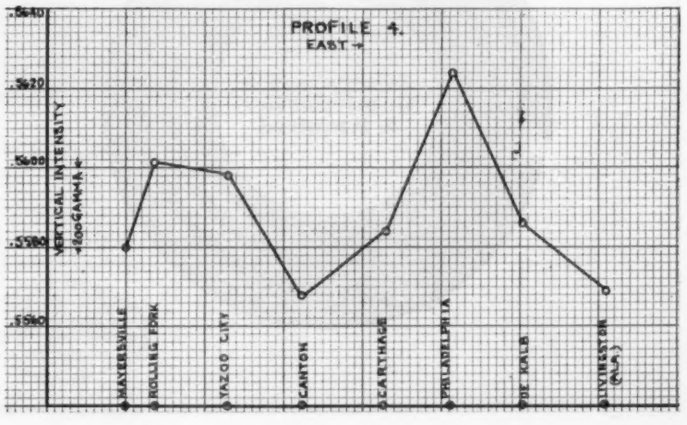
Profile 1 presents a very clear contrast of the magnetic intensities in the vicinity of Oxford; the differences in intensities between the high at Oxford and

(Continued on Page 178)









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WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

(Continued from Page 52)

Lario-Lathrop's No. 1 Cornell, NW cor. NW Sec. 24-28-3w ..... Drlg. 4,750 ft.

GARVIN COUNTY

Gardner Pet. Co.'s No. 1 Halverson, SW cor. NE Sec. 8-4-2 ..... Drlg. 130 ft.
Gilcrease Oil Co.'s No. 1 Kelly, SE cor. NW NE Sec. 36-3-3w ..... Dry and abandoned 4,690-97 ft.

GREER COUNTY

Helmerick & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w. Rig on ground.
I. T. I. O. and others' No. 1 fee, C SW NE Sec. 17-6-24w ..... Drlg. 1,710 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w .. Drlg. 140 ft.

HARMON COUNTY

I. T. I. O. Co.'s No. 1 fee, C SW SE Sec. 17-5-24w ..... Rig.

HASKELL COUNTY

Holden's No. 1 Phillip, SE cor. Sec. 5-9-18e ..... Drlg. 1,350 ft.
Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e.. Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e.. Shut down 2,100 ft.

HUGHES COUNTY

Whitney et al's No. 1 Moore, SE SW Sec. 17-5-9 ..... Underreaming 6-in. csg. 3,910 ft.
McGee Co.'s No. 1 fee, SE cor. Sec. 25-8-11e ..... Drlg. 2,965 ft.
The Texas Company's No. 1 Bryan, SE NE SW Sec. 9-6-8e ..... Drlg. 3,396 ft.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w ..... Shut down 2,020 ft.

KINGFISHER COUNTY

Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w ..... Drlg. 4,785 ft.
McKenna & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w ..... Shut down 4,895 ft.

KIOWA COUNTY

Hyde et al's No. 1 Jones, SE cor. Sec. 23-3-18w-50 ..... Shut down 50 ft.
S. H. Christian's No. 1 Stone, SE cor. Sec. 18-7-18w ..... Rig on ground.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w.. Shut down 1,035 ft.
McWharter and others' No. 1 Sherwood, CWL NW NE Sec. 2-5-17w ..... Shut down 680 ft.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e ..... Rig on ground.
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 ..... Fishing 3,954 ft.

LINCOLN COUNTY

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 ..... Rig.
Morgan & Flynn's No. 1 Finlay, SW cor. SW Sec. 19-16-6 ..... Drlg. 2,225 ft.

LOGAN COUNTY

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w.. Cleaning out 5-in. csg. 3,970 ft.

McINTOSH COUNTY

Spring Valley Oil Co.'s No. 1 Carr, SE cor. NE NW Sec. 16-10-13e ..... Shut down 250 ft.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shot 240 qts. 5,446-5,559 ft.; fishing up the hole.
Wolfe and others' No. 1 Unknown, NW cor. SE Sec. 15-12-18 ..... Rig on ground.

MAJOR COUNTY

Earl and others' No. 1 Turner, C NE NE Sec. 23-20-14w.. Rig.
Wilson and others' No. 1 Unknown, NE cor. NE Sec. 4-23-16w ..... Shut down 510 ft.

MUSKOGEE COUNTY

Bradley's No. 1 Anderson, NW NW SW Sec. 26-15-19e .. Machine.
Cooper-Badget's No. 1 Young, NW NE NE Sec. 7-12-20e.. Shut down 50 ft.
Tulkogee Oil Co.'s No. 1 Thompson, NW NE Sec. 31-15-20e ..... Machine.
Slusher's No. 1 Barnes, NE cor. Sec. 22-13-19e ..... Machine.
J. L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20 ..... Shut down 775 ft.

NOBLE COUNTY

Gypsy Oil Co.'s No. 1 Bailey, C NE NE Sec. 24-22-1e .... Rig.
Magnolia Petroleum's No. 1 King, C SE SW Sec. 26-20-1w. Rig.

OKFUSKEE COUNTY

Superior and others' No. 1 Carolina, SE cor. Sec. 6-11-7e ..... Location.

OKLAHOMA COUNTY

Mid-Kansas' No. 1 Trosper, NE NW Sec. 19-12-1w ..... Drlg. 4,713 ft.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w ..... Shut down 4,750 ft.

PITTSBURG COUNTY

Empire O. & R. Co.'s No. 1 Unknown, C NE SE Sec. 33-7-16e ..... Location.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 ..... Shut down 1,800 ft.

POTTAWATOMIE COUNTY

Phillips Pet. Co.'s No. 1 King, NW cor. Sec. 26-8-4 ..... Rig on ground.
Sinclair and Mid-Continent's No. 1 Cumings, SE NE SE Sec. 6-7-5 ..... Rig.
Shaffer and Margay's No. 1 Murphy NW NE Sec. 11-6-3 ..... Location.
Cal-Cui Oil Co.'s No. 1 McKnight, NW cor. NE NW Sec. 9-8-3 ..... Location.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 William, C SW Sec. 23-12-24w ..... Location.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w .... Shut down 725 ft.

SEMINOLE COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 Factor, SW NE SE Sec. 3-5-7e ..... Drlg. 4,284 ft.
Continental Oil Co.'s No. 1 Proctor, SE cor. NE NE Sec. 5-8-8e ..... Drlg. 3,635 ft.
McCulloch Oil Co.'s No. 1 Powell, NW cor. NW Sec. 11-6-5 ..... Rigging up standard tools 4,335 ft.
Magnolia Pet. Co.'s No. 1 Harjo, NE cor. SE Sec. 34-6-7.. Drlg. 4,716 ft.

SEQUOYAH COUNTY

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Shut down 1,105 ft.
Buffington and others' No. 1 Melcher, C SW NW Sec. 31-12-24 ..... Shut down 3,000 ft.

WOODS COUNTY

Peerless O. & G. et al's No. 1 Cromwell, SW SE Sec. 14-28-16w ..... Rig on ground.
E. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w ..... Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Drlg. 5,420 ft.
Sinclair Oil & Gas Co.'s No. 1 Steward, C SW SW Sec. 33-27-16w ..... Drlg. 3,300 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 22-23-17w ..... Shut down 1,387 ft.
Prairie Oil & Gas Co. and others' No. 1 James, NE cor. NW Sec. 23-23-17w ..... Drlg. 4,298 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w ..... Shut down 3,705 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w ..... Shut down 1,910 ft.
Wilson and others' No. 1 Unknown, NE cor. SW Sec. 4-23-16w ..... Shut down 510 ft.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Wapanucka Oil Co.'s No. 1 Banks, CWL SE SE Sec. 28-2s-9 ..... Shut down 1,530 ft.

BRYAN COUNTY

Wheeler & Wiley's No. 1 Pitts, NW cor. Sec. 36-6s-9e.. Underreaming 723 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e ..... Shut down 1,390 ft.

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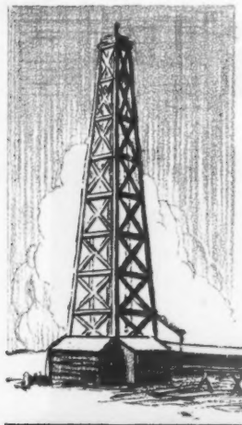

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CARTER COUNTY

L. J. Woodruff's No. 1 Zellnear, NE cor. NW SE Sec. 34-4s-1 ..... Drlg. 850 ft.
Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Shut down 420 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-9 ..... Shut down 1,346 ft.

COTTON COUNTY

Hedrick et al's No. 1 Bull, SW SE Sec. 3-15-10w ..... Drlg. 1,860 ft.
Birdwell et al's No. 1 Means, SE SW SW Sec. 24-1-11w.. Shut down 1,626 ft.
Kirbow and others' No. 1 Brown, NE SW Sec. 35-3-12w.. Dry and abandoned 2,240 ft.
Pewlin Pet. Co.'s No. 1 King, SW SE Sec. 22-3-9w ..... Drlg. 3,080 ft.
Amerada Pet. Corp.'s No. 1 Dulaney, SE cor. NW NW Sec. 31-4-9w ..... Drlg. 2,530 ft.

JEFFERSON COUNTY

Gypsy and Roy Johnson's No. 1 Unknown, NW SE SE Sec. 2-7s-7w ..... Drlg. 1,500 ft.
Danciger et al's No. 1 Dilley, SE NW (O.D.D.) Sec. 11-5-7w ..... Rig.
Wirt Franklin Pet.'s No. 1 Sanders, SE NW Sec. 10-4-8w. Drlg. 2,648 ft.
Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7. Spudded and shut down 350 ft.
Pierce & Brown's No. 1 School Land, SE NE NW Sec. 16-5-8w ..... Dry and abandoned 2,965-3,000 ft.

JOHNSTON COUNTY

Smith & Knisely's No. 1 Lane, E half Sec. 29-1-7 ..... Shut down 2,090 ft.
Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 405 ft.

MURRAY COUNTY

Bison Oil Co.'s No. 1 Labor, NW cor. Sec. 17-1-2e ..... 500,000 ft. gas and show of oil 2,185-2,228 ft.; shut down 2,270 ft.

STEPHENS COUNTY

Leath et al's No. 1 Handley, SE SW Sec. 24-2-9w ..... Drlg. 700 ft.
Wirt Franklin Pet.'s No. 1 Spain, SW SE NW Sec. 9-2-5w ..... Drlg. 2,831 ft.
G. W. Haines et al's No. 1 Woolsey, SE cor. SW NE Sec. 4-3s-6w ..... Location.
Ellis Drilling Co.'s No. 1 Yates, SW NE Sec. 4-3-7w .... Drlg. 2,166 ft.
Smythe and others' No. 1 Shaw, NE cor. NE Sec. 27-2-8w ..... Shut down 1,765 ft.

TILLMAN COUNTY

Cochran & Ridgway's No. 1 Barnes, C NW NE ..... Cellar.
Burt Lambert and others' No. 1 Zivlig, C NW Sec. 25-1-18w ..... Drlg. 3,274 ft.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-3s-15w ..... Shut down 2,535 ft.
Allen & Treadwell's No. 1 Howell, NW cor. SE Sec. 13-1-17w ..... Shut down 820 ft.

OKLAHOMA PANHANDLE

Magnolia Pet. Co.'s No. 1 School, C SE NE Sec. 22-5-5.... Drlg. 4,105-25 ft.; water.
Skaer's No. 1 Hitch, NW cor. Sec. 25-1-15e ..... Drlg. 250 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 54)

Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w ..... Shut down 3,012 ft.
Slick & Cornell's No. 1 Gatz, NW cor. SE Sec. 36-22-1e... Drlg. 3,272 ft.
Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w.. Shut down 3,444 ft.
Patton et al's No. 1 Dunning, SE cor. SW NE Sec. 26-24-1. Drlg. 3,120 ft.
Rosenthal et al's No. 1 Ingalls, C NW SW Sec 24-23-3w.. Shut down 2,370 ft.
Jolly & Ogg's No. 1 Hupp, SE cor. NE Sec. 22-23-1w .... Fishing 3,220 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w .. Rig.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

KINGMAN COUNTY

Gypsy Oil Co.'s No. 1 Kincaid, NE cor. NW Sec. 18-29-5w ..... Drlg. 3,815 ft.

LANE COUNTY

Robinson's No. 1 Dickerson, Sec. 11-18-27w ..... Shut down 2,650 ft.
Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w ..... Spudded and shut down.

MARSHALL COUNTY

Skelly Oil Co.'s No. 1 Mehl, NW NE Sec. 11-20-4e..... Drlg. 900 ft.
Irwin et al's No. 1 Cooper, NE NW Sec. 10-3-7e..... Shut down 2,020 ft.
Empire O. & R. Co.'s No. 1 Scally, SW NE NE Sec. 28-19-2e ..... Drlg. 2,675 ft.

MARION COUNTY

Shell Pet. Corp.'s No. 1 Scully, NW NE Sec. 34-18-2e .... Drlg. 140 ft.
Hobworth et al's No. 1 Skiles, SE NW NW Sec. 30-21-3e.. Shut down 1,945 ft.
Connell & Prairie's No. 1 Zirak, SE cor. SW Sec. 3-18-3e ..... Underreaming 6-in. csg. 2,770-72 ft.
General Utilities Co.'s No. 1 Burkholder, Sec. 18-19-3e.... Hole full water 2,903-20 ft.; abandoned.
General Utilities Co.'s No. 1 Propp, NE cor. SE SW Sec. 8-19-4e ..... Rig.
A. E. Meyers' No. 1 Papp, SW cor. SW NE Sec. 10-18-2... Abandoned 3,111 ft.
Frank L. Moore's No. 1 Miller, NE cor. NE Sec. 26-19-1.. Underreaming 6-in. csg. 3,886 ft.

McPHERSON COUNTY

E. W. Marland's No. 1 Swanson, NE SW NE Sec. 36-18-4w. Rig.
Slick, Pryor & Lockhart's No. 1 Gratton, C NE NW NW, Sec. 34-20-3w ..... Drlg. 650 ft.
Helmerich & Payne's No. 1 Klassen, SE NE NE Sec. 14-21-1w ..... Shut down 417 ft.
McPherson Oil & Gas Co.'s No. 1 Decker, C SE Sec. 11-19-2w ..... Drlg. 2,695 ft.
Helmerich & Payne's No. 1 Rosen, NE cor. SE SW Sec. 25-21-2w ..... Shut down 2,490 ft.
McPherson Gas Co.'s No. 1 Chinberg, NW cor. Sec. 18-19-2w ..... Drlg. 2,160 ft.
McPherson O. & G. Co.'s No. 1 Rasmueson, SW cor. Sec. 8-18-3w ..... Drlg. 1,180 ft.
Ted Washabaugh's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w ..... Fishing 3,301-04 ft.; show of oil.
McPherson Gas Co.'s No. 1 Reitz, NW cor. SE SW Sec. 1-20-2w ..... Underreaming 2,780 ft.
J. H. Tatlock's No. 1 Hayer, C SW NE Sec. 32-20-1w.... Drlg. 2,760 ft.

NORRIS COUNTY

Hiatt et al's No. 1 Blythe, NW NE Sec. 15-5e..... Shut down 2,227 ft.

NESS COUNTY

E. W. Mariand, Inc.'s No. 1 Moses, NE SE Sec. 7-18-25w. Rig.
Barnsdall Oil Co.'s No. 1 Lauk, C SW Sec. 35-18-21w.... 4,224-29 ft.; 100 oil, 100 water; testing.

OSBORNE COUNTY

Phillips Pet. Co.'s No. 1 Greive, NW SE NE Sec. 6-7-12w. Rig.
Mid-Kansas' No. 1 Boyce, SE cor. NW Sec. 18-6-13w.... Shut down 300 ft.
Empire O. & R. Co.'s No. 1 Crest, SE NE Sec. 30-9-14w.. Abandoned 3,775 ft.
Trees Oil Co.'s No. 1 Payenter, NE cor. SE SE Sec. 22-6-15 ..... Drlg. 2,155 ft.
S. D. Jarvis' No. 1 Jellison, SE cor. SE Sec. 13-10-15w... Cementing 3,390 ft.

OTTAWA COUNTY

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w.. Drlg. 3,690 ft.

PAWNEE COUNTY

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w. Shut down 1,560 ft.

PHILLIPS COUNTY

Watsonian-British American's No. 1 Weilman, C SW SW Sec. 34-2-19w ..... Shut down 2,390 ft.

PRATT COUNTY

O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w.. Fishing 2,540 ft.
Empire O. & R. Co.'s No. 1 Henderson, SW cor. Sec. 35-25-4w ..... Drlg. 3,300 ft.

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MAKES PIPING JOBS EASY

No matter where the pipe may be, down in the trench or high up in the refinery, a "TOLEDO" tool will cut or thread the pipe, even up to 12", easily, quickly, perfectly.

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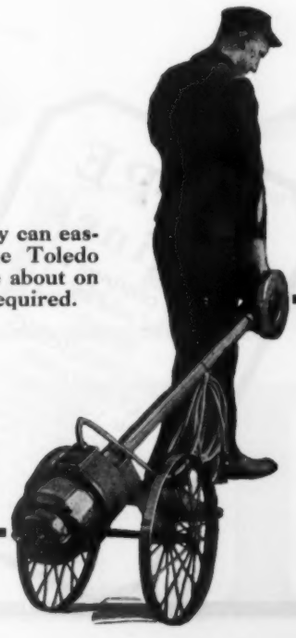

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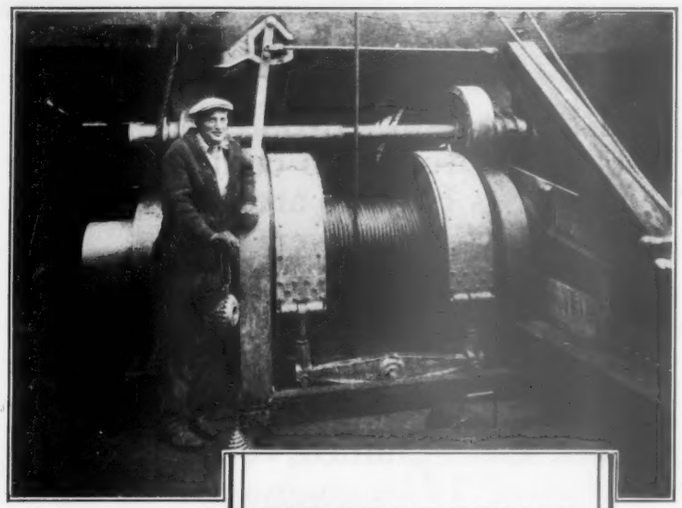

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RENO COUNTY

Skelly Oil Co.'s No. 1 Birkett, NE SW Sec. 30-24-7w....Rig.
Perry et al's No. 1 Oswald, NE cor. NE SE Sec. 30-22-5w....Drlg. 3,605 ft.
Milmar Oil Co.'s No. 1 Strickley, SW cor. SW Sec. 17-26-5w....Fishing 2,550 ft.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w....Cellar.
Higgins & Steinbuchel's No. 1 Shurr, NE cor. SW Sec. 21-20-10w....Drlg. 2,380 ft.

RILEY COUNTY

Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e..Rig.

RUSSELL COUNTY

Allison & Fitzwilliams' No. 1 Mohenny, NW SE Sec. 5-14-12w....Drlg. 2,875 ft.
Phillips Pet. Co.'s No. 1 Salback, SE NW Sec. 32-12-14w....Underreaming 6-in. csg. 3,214 ft.
T. B. Slick's No. 1 Sellans, SW cor. NE Sec. 36-15-13w...Shut down 3,300 ft.

ROOKS COUNTY

Kruger et al's No. 1 Stels, NW SE SW Sec. 12-9-16w....Shut down 50 ft.
Burford-Brim's No. 1 Toxa, Sec. 22-9-17w....Spudded; shut down.
Prairie O. & G. Co.'s No. 1 Gick, SE cor. Sec. 22-9-19w..Shut down 3,585 ft.
Prairie O. & G. Co.'s No. 1 Sandberg, C SW Sec. 20-9-18w....Abandoned 3,860 ft.

RUSH COUNTY

Sinclair Oil & Gas Co.'s No. 1 Seur, C SW NW NW Sec. 8-18-17w....Drlg. 2,620 ft.
Danciger Oil Ref. Co.'s No. 1 Swindt, SW cor. Sec. 22-17-17w....Drlg. 3,104 ft.
Barnsdall Oil Co.'s No. 1 Brock, C SE SE Sec. 21-17-17w....Drlg. 2,550 ft.
Central Commercial Oil Co.'s No. 1 Brock, SE cor. SW SW Sec. 12-17-16w....Shut down 50 ft.
Danciger Oil Ref. Co.'s No. 1 Poland, NE cor. SW NE Sec. 17-19-17w....Drlg. 3,450 ft.
Wilcox Oil & Gas Co.'s No. 1 Schwartzkopf, NE cor. NW SW Sec. 27-17-17w....Drlg. 3,725 ft.
Wilcox O. & G. Co.'s No. 1 Woodward, NE cor. NE Sec. 35-27-17w....Drlg. 3,622 ft.

SALINE COUNTY

Dixie Oil Co.'s No. 1 Muir, C SW SE Sec. 6-15-2w.....Drlg. 2,672 ft.
Kinney-Coastal Oil Co.'s No. 1 Beal, C NW Sec. 23-Shut down 50 ft.
M. Estey et al's No. 1 Peterson, C NE Sec. 6-16-5w.....Spudded and shut down.
Boyle et al's No. 1 Miller, SW cor. SE Sec. 21-16-1w....Drlg. 3,080 ft.
Kenney-Coastal Oil Co.'s No. 1 Beal, C NW Sec. 23-14-5w....Drlg. 3,530 ft.

SEDGWICK COUNTY

Lario O. & G. Co.'s No. 1 Calkins, SW cor. SE Sec. 7-27-2e....Rig on ground.
E. W. Marland's No. 1 Huggins, SE NW SW Sec. 30-27-2....Rig.
Johnson & Marshall's No. 1 Roy, NE cor. SE SW Sec. 23-29-1w....Drlg. 700 ft.
Lario O. & G. Co.'s No. 1 Teachorff, NE cor. SW Sec. 27-29-1w....Spudding.
Kyle et al's No. 1 Pinney, SW NW SE Sec. 29-28-1w....Shut down 50 ft.
Simmons & Canary's No. 1 Scott, NE NW NE Sec. 22-26-1e....Shut down 1,420 ft.
T. B. Slick's No. 1 Rosenhagen, SW SE NE Sec. 33-27-4w....Drlg. 3,750 ft.
Hammond & Stout's No. 1 Roeder, SW NW Sec. 23-27-2w....Drlg. 2,005 ft.
Twist et al's No. 1 Armstrong, NE NW Sec. 28-26-1e....Rig; spud; shut down.
Shawver et al's No. 1 Scott, SE cor. SW SW Sec. 10-28-1e....Underreaming 2,790 ft.
Barnett O. & G. Co.'s No. 1 Davidson, NW cor. NW SW Sec. 27-26-1e....Drlg. 2,650 ft.
Kellar & Lewis' No. 1 Buckles, NW cor. SE Sec. 3-28-1w..Cleaning out, total depth 430 ft.
Magnolia Pet. Co.'s No. 1 Wise, NW cor. NW Sec. 36-28-2w....Drlg. 3,530 ft.
Blankenship et al's No. 1 Tuttle, SW cor. NW Sec. 1-27-1....Hole full water 3,397-3,410 ft.; F. B. to 2,988 ft.
Twist et al's No. 1 Joseph, CNL SW SE Sec. 4-25-1w...Shut down 1,980 ft.
Miller Wentz' No. 1 Shaffer, NE cor. NE Sec. 9-27-2w...Drlg. 3,055 ft.
Kroder et al's No. 1 Harden, SW cor. NW SW Sec. 20-26-1e....Shut down 1,100 ft.
Morgan et al's No. 1 Corn, SW cor. NE Sec. 28-25-1w....Drlg. 3,815 ft.
Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w....Drlg. 520 ft.
Sullivan et al's No. 1 Shelly, NW cor. NE SE Sec. 32-29-2e....Shut down 2,990 ft.
Hartman & Skaer et al's No. 1 Hutchinson, SE cor. SE SW Sec. 23-28-3w....Drlg. 4,025 ft.
Producers Oil Co.'s No. 1 Jones, SW cor. NE SE Sec. 31-26-2....Hole full water 3,357-75 ft.; shut down 3,409 ft.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e..Drlg. 1,285 ft.
Frank Wahn's No. 1 Wilson, C NE NW SE Sec. 9-26-1w..Underreaming 6-in. casing 3,290 ft.
Connell & Slick's No. 1 Mohannah, C NE SE SE Sec. 3-25-1w....Underreaming 6-in. csg. 3,315 ft.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w....Shut down 3,035 ft.

STEVENS COUNTY

Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w..Shut down 500 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16 34-38w....Shut down 1,320 ft.

SMITH COUNTY

Phillips Pet.'s No. 1 Clydesdale, SE NW Sec. 23-5-14w...Rig.
Mid-Kansas Oil & Gas Co.'s No. 1 Unknown, NE cor. NE Sec. 4-2-13w....Drlg. 3,998 ft.

SUMNER COUNTY

Morgan & Carey's No. 1 Hawkins, SW SE Sec. 9-34-1e...Drlg. 350 ft.
Gypsy & Blankenship's No. 1 Robeck, C SW SW Sec. 27-34-4w....Drlg. 3,825 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w....Rig.

TREGO COUNTY

Day et al's No. 1 Gugler, SW NE NE Sec. 36-12-21w....Shut down 50 ft.
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w...Drlg. 875 ft.
Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w....Hole full oil 3,960-72 ft.; averaging 189 bbls. daily.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3..Drlg. 2,020 ft.

WALLACE COUNTY

Morton & Entyre's No. 1 Parker, SE cor. NW SW Sec. 20-13-41w....Rig.

WILDCAT OPERATIONS IN NEBRASKA

(Descriptions are East unless otherwise marked)

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w....Rig.
Northwestern's No. 1 Ingold, C NE Sec. 24-6n-38w.....Total depth 4,050 ft.; cementing cave.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w....Shut down 1,510 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-23w...Shut down 3,150 ft.

WEBSTER COUNTY

Mid-States Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w....Rig.

The extremely close working tolerances of Jones A. P. I. Sucker Rod threads and joints is illustrated by the fact that the minimum clearance between the largest possible pin and the smallest possible box is only one thousandth of an inch.

In order to assure you that the threaded pins and boxes of Jones H. M. Sucker Rods will reach you in the same clean, perfect condition as they left the factory, every box and pin is carefully fitted with the Jones thread protectors which preserve the original accuracy of the threads as well.

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BETTIS PROTECTORS Never Fail

ONCE USED— always used!

Primarily designed to protect the casing and drill pipe from abrasion, Bettis Protectors contribute many other advantages, directly and indirectly—such as saving fuel, reducing vibration, lengthening life of wire lines, minimizing twistoffs, making straighter hole and helping relieve all equipment of excessive wear and tear.

FULLY PATENTED

Consider the simplicity of the Bettis made of *one-piece* rubber —compounded by the most scientific methods. It snaps over the pipe and *stays* where placed. No seams, no hinges or pins, no metal added to hole—nothing to cause a bad fishing job. They've never failed—not once.

WHAT "THEY SAY" ABOUT BETTIS PROTECTION

Actual Field Reports

Long Beach Well

"Bettis rubbers have been on our pipe close to one whole year and we have never had to change a collar on this string. The pipe has been used in 3 wells and 90% of the Rubbers still look good."

Another Long Beach Well

"Bettis rubbers used 4 months steady on one hole to finish. Now using same on No. 2 well and Protectors look as good as new."

Driller at Ventura

"I wouldn't know how to drill any more without Bettis Protectors."

Saving Fuel and Line

"On the last well we drilled we saved about half of the fuel and seventy-five per cent on the wire lines by using Bettis Protectors."

Grip Tightly

"We drilled in Santa Fe Springs well from top to bottom with Bettis Protectors, and not a single one slipped or showed the least bit of wear even though the well was 6000 feet."

Quickly Repaid

"Bettis Protectors are the real thing for drilling wells. They paid for themselves in 60 days on the saving of couplings alone, to say nothing of the saving in other equipment and fuel."

Easy Rotation

"Boy, I don't think I could make a foot of hole if I had to drill now without Bettis Protectors, since I have become accustomed to the pipe rotating so easily. I hope I never have to drill a well that is not Bettis-equipped."

Heavy Drilling

"We've hit 6700 feet deep using Bettis Protectors and this is the second hole for these Rubbers and they are still in fine shape. I don't think our drill pipe would have held together if we had not had these Protectors as the friction would have caused us plenty of fishing jobs."

Faster Drilling

"We find that Bettis Protectors reduce our drilling time about 10 to 15 days to a well because the pipe rotates much easier and the pipe pulls easier and floats in going in hole, therefore saving brake bands and drilling equipment."

In Open Hole

"We have been running Bettis Protectors in open holes as well as in casing and we believe they help keep the hole straight and certainly make drilling much easier."

Longer Life to Wire Line

"Bettis Protectors make the life of the wire line almost twice as long as the drill pipe has a tendency to float in more or less, therefore relieving the wire line of that load. Also, these rubbers make the pipe drag easier coming out. The pipe rotated so easy I thought at first that a twistoff had occurred."

Ask any driller in the field who uses Bettis Protectors. There are no exceptions—everyone is satisfied. More than 150,000 Bettis rubbers have been placed in service.

"Best bet yet!"

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"Charley" Brant has used 'em all

Mr. C. P. Brant, ... Indianapolis, Ind., and an oil well he drilled with UNION Wire Rope in the Muskegon, Mich., field.

Mr. C. P. (Charley) Brant, who is still in the contracting business at 75 years of age, was one of the pioneer users of wire rope for oil well drilling. He has used all makes—but finds that UNION Wire Lines are the last word in *service*. His three strings of tools are equipped with UNION Wire Lines.

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TRADE MARK

UNION WIRE LINES

GULF COAST FIELDS AND WILDCATS

(Continued from Page 61)

BLUE RIDGE—FORT BEND COUNTY

Gulf Production Co.'s No. 15 Luscher, east side ..... Set 6⅝-in. casing 4,275 ft.; total depth 4,354 ft.
Gulf Production Co.'s No. 4 Invincible (old well) ..... To deepen.
Moody Corp.'s No. 6 West-Schenck, south side ..... Pumping 500 bbls. fluid, 90 per cent water; sand 3,948-88 ft.
Moody Corp.'s No. 8 West-Schenck ..... Location.
Navarro Oil Co.'s No. 1-C Robinson, northwest ..... Drlg. sand and shale 4,354 ft.
Abercrombie & Harrison's No. 1 Ritter ..... To work over; formerly aband. 5,558 ft.
Gulf Production Co.'s No. 29 Taylor (work-over) ..... Drlg. sticky shale 4,030 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Production Co.'s No. 30 Taylor, east ..... Drlg. hard sand and lime 4,097 ft.
Gulf Production Co.'s No. 3 Fitzsimmons-Hammon ..... Drlg. 4,621 ft.
Moody Corp.'s No. 2 Calvert, northeast ..... Drlg. gumbo and lime 1,945 ft.
Moody Corp.'s No. 2-A Whitehead, northeast ..... Drlg. sand 4,260 ft.
Moody Corp.'s No. 5-B Settegast ..... Rig.
Moody Corp.'s No. 1 Herman, southwest (old well) ..... Drlg. 4,212 ft.
Navarro Oil Co.-Humble Oil & Refg. Co.'s No. 4 Dooley, east ..... Rig.
Navarro Oil Co.-Texas Exploration Co.'s No. 16 Dooley, east side ..... Drlg. sand and boulders 950 ft.
Navarro Oil Co.'s No. 4-B Cain ..... Drlg. sand and boulders 1,171 ft.
Pure Oil Co.'s No. 1 Herman estate, southwest ..... Drlg. sidetracked hole 3,560 ft.
Rio Bravo Oil Co.'s No. 8-A Settegast (old well) ..... To work over.
Rio Bravo Oil Co.'s No. 14-A Settegast, west ..... Drlg. sand and shale 2,299 ft.
Rio Bravo Oil Co.'s No. 15-A Settegast, southwest ..... Drlg. gumbo and lime 3,962 ft.
Saxet Gas Co.'s No. 2 Herman estate, southwest ..... Killed gas blowout; drlg. gumbo 4,534 ft.
Saxet Gas Co.'s No. 3 Herman estate, southwest ..... Drlg. shale 1,980 ft.
Smith et al's No. 3 Parson (old well), northwest ..... Drlg. 4,758 ft.
J. T. Barron's No. 3 Fitzsimmons ..... Derrick.
Shaw & Texas Exploration Co.'s No. 2-F Fitzsimmons... Derrick.
T. G. Shaw's No. 1 Dooley ..... Rig.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 3 Goggan ..... Rigged.
J. W. O'Brien's No. 1 Hanszen ..... Aband. 660 ft.
Navarro Oil Co.'s No. 5 Baldwin Community ..... Rig.
Pierce & Rogers' No. 1 Pickett ..... Drlg. 421 ft.
Sun Oil Co.'s No. 41 Mitchell ..... Salt 2,251 ft.; aband.
Sun Oil Co.'s No. 45 Mitchell ..... Rigged up.
Sun Oil Co.'s No. 46 Mitchell ..... Location.
The Texas Company's No. 21 Staiti ..... Drlg. rock 1,289 ft.
The Texas Company's No. 3 Pickett ..... Sand and shale 5,174 ft.; preparing to test.
Vacuum Oil Co.'s No. 11 Barrett ..... To pump 2,817 ft.
Yount Lee Oil Co.'s No. 17 Mitchell ..... Gumbo 639 ft.; shut down high water.

HULL—LIBERTY COUNTY

Daisetta Oil Co.'s No. 1 Wilson ..... Drlg. 2,043 ft.
Empire Gas & Fuel Co.'s No. 21 Barngrover ..... Drlg. 3,788 ft.
Gulf Production Co.'s No. 93 Phoenix ..... Drlg. 1,801 ft.
Humble Oil & Ref. Co.'s No. 4 Hooks-Spell (old well) ..... Drlg. 3,678 ft.
Republic Production Co.'s No. 24 Dolbear (old well) ..... Working over 1,614 ft.
Republic Production Co.'s No. 139 Dolbear (old well) ..... Drlg. 1,001 ft.
Republic Production Co.'s No. 1 Taylor ..... Drlg. 4,012 ft.

BIG CREEK—FORT BEND COUNTY

Benedum & Trees' No. 2 Ahlers ..... Pulling liner to deepen.
Gulf Prod. Co.'s No. 37 Davis (old well) ..... Drlg. 4,446 ft.
Gulf Production Co.'s No. 54 Davis ..... Rigged.
The Texas Company's No. 2 Wheat (old well) ..... To deepen.
Navarro Oil Co.'s No. 3 Haussler (former gas well) ..... Drlg. hard sand 3,176 ft.
Navarro Oil Co.'s No. 4 Davis ..... Location.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Drlg. hard sandy shale 3,151 ft.

BATSON—HARDIN COUNTY

Acorn Oil Co.'s No. 70 Paraffine ..... Pumping 275 bbls. fluid, 50 bbls. oil 1,137 ft.
Ada Belle Oil Co.'s No. 127 Producers ..... Drlg. 976 ft.
Capitol Oil Co.'s No. 11 Hodges ..... To pump 3,190 ft.
Gulf Production Co.'s No. 18 Knight fee (old well) .... Drlg. 948 ft.
Paraffine Oil Co.'s No. 46 Paraffine ..... Standing 1,248 ft.

SOUR LAKE—HARDIN COUNTY

Gulf Prod. Co.'s No. 3 Thomason (workover) ..... Sidetracking 4,273 ft.; total depth 4,300 ft.
Humble Oil & Refg. Co.'s No. 2-C Jackson (old well).... Drlg. 1,599 ft.
Lake View Oil Co.'s No. 60 Hardin ..... Drlg. 171 ft.

SARATOGA—HARDIN COUNTY

Cullen & West's No. 1 Bashara (Baker) ..... Aband. 4,401 ft.
Weldon Oil Co.'s No. 19 Hooks ..... Drlg. 515 ft.

ORANGE—ORANGE COUNTY

Brownie Babbette Oil Co.'s No. 12 McLean (old well).... Set strainer to test 4,029 ft.
Orange Pet. Co.'s No. 3 Berwick (old well) ..... Drlg. 3,281 ft.
Rex Petroleum Co.'s No. 2-B Carbello (old well)..... Sidetracking 3,132 ft.

GOOSE CREEK—HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 75 Simms-Smith ..... Fishing screen 4,488 ft.
C. T. Rucker's No. 1 Jones ..... Drlg. 832 ft.
Russell Farrell's No. 5 Gillette (old well) ..... Salt water 2,562 ft.; pulling wash pipe.
Lee & Scott's No. 1 Midfield ..... Derrick.
W. C. Turnbow's No. 6 Scorrega (old well) ..... Drlg. 1,417 ft.

SPINDLETOP—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 8 Roche (workover) ..... Tested salt water 3,420 ft.; pulling strainer to deepen.
Unity Oil Co.'s No. 14 Gladys City ..... Oil standing; to pump.
Unity Oil Co.'s No. 15 Gladys ..... Drlg. rock 755 ft.
Yount Lee Oil Co.'s No. 14 McFaddin (old well) ..... Flow. 500 bbls. 2,943 ft.
Yount Lee Oil Co.'s No. 26 McFaddin (workover) ..... Standing 3,405 ft.
Yount Lee Oil Co.'s No. 73 McFaddin (old well) ..... To work over.
Yount Lee Oil Co.'s No. 94 McFaddin ..... Tested dry 3,825 ft.; to deepen.
Yount Lee Oil Co.'s No. 104 McFaddin ..... Flowing 500 bbls. by heads 3,600 ft.
Yount Lee Oil Co.'s No. 105 McFaddin ..... Drlg. rock 3,625 ft.
Yount Lee Oil Co.'s No. 106 McFaddin ..... Drlg. rock 3,450 ft.
Yount Lee Oil Co.'s No. 107 McFaddin ..... Rig.
Yount Lee Oil Co.'s No. 4 fee (workover) ..... Coring sand 4,950 ft.
Yount Lee Oil Co.'s No. 91 Gladys City ..... Drlg. shale and lime 3,257 ft.
Yount Lee Oil Co.'s No. 92 Gladys City ..... Flowing 450 bbls. 3,176 ft.
Yount Lee Oil Co.'s No. 93 Gladys City ..... Core sand 3,875 ft.
Yount Lee Oil Co.'s No. 94 Gladys City ..... Dry sand 1,250 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Humble Oil & Refg. Co.'s No. 3 Smith ..... Derrick.
The Texas Company's No. 24 Arnold ..... Rig.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 9 Smith ..... Drlg. 803 ft.
Marrs McLean's No. 11 Cade (old well) ..... To deepen 3,747 ft.
Marrs McLean's No. 15 Cade ..... Tested salt water 3,387 ft.; standing.

DAMON MOUND—BRAZORIA COUNTY

Allen & West's No. 1 Smith ..... Rig.
Sinclair Oil & Gas Co.'s No. 6 Norton ..... Set 6⅝-in. casing 3,965 ft.; total depth 4,044 ft.
Leonard Petroleum Co.'s No. 4 Wisdom ..... Drlg. sand 2,614 ft.

MARKHAM—MATAGORDA COUNTY

Rycade Oil Corp.-Humble Oil & Ref. Co.'s No. 6-A Kountze ..... Pulling liner to deepen 3,797 ft.
West Prod. Co.'s No. 1 Myers ..... Core gumbo 4,445 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 19 Moore ..... Drlg. gummy shale 4,050 ft.

NORTH DAYTON—LIBERTY COUNTY

Duho Oil Co.'s No. 7 Quintette ..... Location.
Fort Bend Oil Co.'s No. 1 Ballarack ..... Drlg. sticky shale 4,162 ft.
Harrison Oil Co.'s No. 4 Quintette ..... Derrick.
Sun Oil Co.'s No. 2 Kovelcik ..... Coring 5,035 ft.

REFUGIO—REFUGIO COUNTY

Houston Gulf Gas Co.'s No. 4 Ryals ..... Sand showing oil 3,663-67 ft.; set 8¼-in. casing.
Houston Gulf Gas Co.'s No. 9 Lambert ..... Drlg. shale 1,579 ft.
Houston Gulf Gas Co.'s No. 6 Shelly ..... Drlg. sandy shale 3,792 ft.
Houston Gulf Gas Co.'s No. 3 Adkins ..... Drlg. 3,534 ft.
Houston Gulf Gas Co.'s No. 2 Rooke ..... Cleaned hole 4,530 ft.; to deepen.
Houston Gulf Gas Co.'s No. 1 Buckley ..... Spudded.
Mission Drlg. Co.'s No. 1 Shelly ..... Swabbing oil sand 3,586-3,628 ft.
Mission Drlg. Co.'s No. 1 Huddleston ..... Oil sand 3,646-53 ft.; set 8¼-in. casing.
Mission Drlg. Co.'s No. 1 O'Brien ..... Drlg. sandy shale 2,623 ft.
Mission Drlg. Co.'s No. 1 Powers ..... Sidetracking 2,631 ft.
Mission Drlg. Co.'s No. 1 J. F. B. Heard ..... Blowing dry gas.
Benedum & Trees' No. 4 Clint Heard ..... Flowing by heads 3,701 ft.
Sun Oil Co.'s No. 1 Rea ..... Blew in gas well, 1,200 lbs., 3,655 ft.; to deepen.
Saxet Co.'s No. 5 Clint Heard ..... To test oil and gas sand 5,006-07 ft.
Saxet Co.'s No. 8 Clint Heard ..... Drlg. gumbo 1,989 ft.
Houston Oil Co.'s No. 6 Pratt-Hewitt-Rooke ..... Core sand 3,679 ft.
Houston Oil Co.'s No. 1 F. Rooke ..... Set screen.
Houston Oil Co.'s No. 6 Wilson Heard ..... Swabbed salt water 3,692 ft.
Houston Oil Co.'s No. 7 Wilson Heard ..... Swabbing 3,691 ft.
Houston Oil Co.'s No. 12 Fannie Heard ..... Drlg. gumbo 1,975 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Shell Petroleum Corp.'s No. 1 Miller ..... Drlg. sand 5,995 ft.
Vacuum Oil Co.-Gulf Ref. Co.'s No. 9 Miller ..... Preparing to work over 4,392 ft.
Vacuum & Gulf's No. 15 Miller ..... Drlg. sandy shale 5,557 ft.
Vacuum & Gulf's No. 3 State ..... Failed to pump; to work over, 4,400 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 14 Watkins ..... Drlg. gumbo 3,735 ft.
Calcasieu Oil Co.'s No. 7 Valery ..... Drlg. rock 3,697 ft.
Fraim Oil Co.'s No. 1 Duhon, Old Hackberry ..... Standing 4,384 ft.
Rycade Oil Corp.-Humble Oil & Refg. Co.'s No. 3 Gulf Land, Old Hackberry ..... Fishing bit 2,276 ft.
The Texas Company's No. 5-B Calcasieu Lake, East Hackberry ..... Location.

JENNINGS—ACADIA PARISH

Cline, Smith & Cline's No. 9 Conklin, Section 46-9s-2w .. Drlg. 1,582 ft.
Fred Getty's No. 3 Jennings-Clemont ..... Location.
E. L. Meyers' No. 1 Clemont-Zigler (old well) ..... To work over 1,805 ft.
Port City Oil Co.'s No. 11 Syndicate Fee, Section 46-9s-2w ..... Drlg. 1,659 ft.
Reliable Oil Co.'s No. 2 Jennings-Heywood ..... Drlg. 1,678 ft.
Yount Lee Oil Co.'s No. 4 Crowley, northeast flank, Section 48-9s-2w ..... Coring 7,310 ft.
Yount Lee Oil Co.'s No. 5 Crowley, Sec. 48-9s-2w ..... Location.

EDGERLY—CALCASIEU PARISH

C. M. Crotty's No. 15 Lillard ..... Location.
Rex Petroleum Co.'s No. 10 Hunter ..... Drlg. 756 ft.
Wilson-Broach's No. 3 Wilson (work-over) ..... Pump. 100 bbls. fluid, 15 per cent b.s. and water, approx. 3,000 ft.

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 66 G. & N. Gray (old well) ..... Drlg. 2,643 ft.
Gulf Refining Co.'s No. 32 Star-Vincent (work-over) .... Tested salt water 3,968 ft.; aband.
Marrs McLean's No. 4 Gray (work-over) ..... Tested dry 1,768 ft.; standing.
Salt Dome Oil Co.'s No. 2 Shaw ..... Drlg. 2,027 ft.
Vinton Petroleum Co.'s No. 14 Gray (work-over) ..... Sidetracking 2,062 ft.
Vinton Petroleum Co.'s No. 9 Rescue (9 acres) ..... Location.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 4 Bouillon fee (old well) ..... To work over.
Rycade Oil Corp.'s No. 7 Bouillon Fee ..... Drlg. 3,637 ft.
Rycade Oil Corp.'s No. 3 State (former well) ..... To work over.

STARKS—CALCASIEU PARISH

Gulf Refining Co.'s No. 15 Lutcher-Moore ..... Drlg. 5,480 ft.
Gulf Refining Co.'s No. 12 Industrial ..... Drlg. 5,910 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 736 Fee ..... Hard sand 6,000 ft.
Union Sulphur Co.'s No. 746 Fee, Sec. 29-9s-10w ..... Rig.
Union Sulphur Co.'s No. 747 Fee, Sec. 29-9s-10w ..... Drlg. 1,400 ft.
Union Sulphur Co.'s No. 748 fee, Section 29-9s-10w..... Drlg. 1,432 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 7 Yount Lee ..... Drlg. hard sand 5,514 ft.

ANSE LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 5 Louisiana Pet. Co. ..... Drlg. 1,950 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Flanigan & Mewis' No. 1 Mewis, James P. Stevenson sur., east of Bellville ..... Shut down 3,780 ft.
Whittington et al's No. 1 Lass, 4 miles northwest of Bellville ..... Derrick.

BRAZORIA COUNTY

Thomas Faust et al's No. 4 fee ..... Drlg. sand 132 ft.
Shell Petroleum Corp.'s No. 4 Allen, Allen dome ..... Waiting orders; total depth 5,184 ft.
Empire Gas & Fuel Co.'s No. 2 Brock, Stratton Ridge .. Hard sand and lime 4,342 ft.
Humphreys Corp.'s No. 1 Bryan, Bryan Mound ..... Drlg. gumbo and shale 3,525 ft.

CHAMBERS COUNTY

Layne et al's No. 1 Fitzgerald ..... Drlg. 502 ft.
Pure Oil Co.'s No. 2 Mayes, Lost Lake ..... Shut down high water 1,992 ft.
Pure Oil Co.'s No. 3 Mayes, Lost Lake ..... Shut down high water 1,871 ft.

FORT BEND COUNTY

Gulf Production Co.'s No. 12 Trone, Long Point ..... Spudded.
Grayburg Oil Co.'s No. 1 Ranson ..... Rig.
Humble Oil & Refg. Co.'s No. 1 Miller, Rosenberg ..... Drlg. shale 2,857 ft.
So. Texas Pet. Co.'s No. 1 Winkleman, Needville ..... Aband. 4,650 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Drlg. sandy shale 4,080 ft.
Humble Oil & Refg. Co.'s No. 2 Irvin ..... Rigging.
Humble Oil & Refg. Co.'s No. 5 Warren, Hockley ..... Tested salt water 4,772 ft.; to deepen.
Humble Oil & Refg. Co.'s No. 1 Woodburn, Genoa ..... Drlg. shale 2,898 ft.
Little York Oil Co.'s No. 1 Davis, Little York ..... Shut down 3,827 ft.
York & Robertson's No. 1 Garrett, Harris & Carpenter survey ..... Location.

JACKSON COUNTY

Wright Bros.' No. 2 Lea ..... Sand 2,670 ft.; to make drill stem test 2,663-70 ft.; standing.

JEFFERSON COUNTY

Bleakie Oil Co.'s No. 1 Tolliver, Dyches survey ..... Drlg. shale and lime 2,592 ft.
Deep Test Oil Corp.'s No. 1 Faith-McFadden ..... Drlg. gumbo 3,553 ft.
Gulf Production Co.'s No. 2 Burrell Fannette ..... To work over.
Gulf Production Co.'s No. 7 Bordages, Fannette ..... Comp. flowing 1,000 bbls. 22 gravity; sand 5,660 ft.; total depth 5,825 ft.
Nederland Oil & Dev. Co.'s No. 1 Young, Nederland ..... Drlg. gumbo 2,520 ft.
River Oil Corp.'s No. 1 Ship Channel, Brown survey ..... Shut down; gumbo 1,721 ft.
Shell Petroleum Corp.'s No. 1 Heisig, Hampshire ..... To set 9⅝-in. casing 4,522 ft.; total depth 5,341 ft.
The Texas Company's No. 1 Pipkin, Big Hill ..... Trying to deepen 5,960 ft.; gas sand.
Vacuum Oil Co.'s No. 1 Herbert-Broussard, T. & N. O. survey No. 208 ..... Location.

LIBERTY COUNTY

Gulf Production Co.'s No. 2 Bert Hankamer ..... Rig.
Humble Oil & Refg. Co.'s No. 5 Sterling, Moss Bluff .... Drlg. sticky shale and lime 3,423 ft.
Harvey Smith and associates' No. 1 Moore's Bluff, Brunson Sur. ..... Rigging.
Pure Oil Co.'s No. 1 Liberty, Moss Bluff ..... Rig.
Republic Production Co.'s No. 1 Myslivec, Moore survey .. No report.

MATAGORDA COUNTY

Crossland and associates' No. 1 Hawkins, Shepherds Mott. Sidetracking 4,200 ft.; bottom heaving shale 5,260 ft.

MONTGOMERY COUNTY

Cullen and associates' No. 1 Chase, near Westfield ..... Drlg. shale 1,758 ft.
Harper Drilling Co.'s No. 1 Gay, W. Landrum survey .. Drlg. shale 2,700 ft.
Kelley-Baker et al's No. 1 Juerges ..... Location.

ORANGE COUNTY

The Texas Company's No. 1 Polk, Port Neches ..... Building foundations.
The Texas Company's No. 1 Starks, Port Neches ..... Building foundations.
Veteran Oil Co.'s No. 1 Reed, A. Nelson survey ..... No report.

WALLER COUNTY

Kirby Petroleum Co.'s No. 1 Vaughn, San Felipe ..... Location.

SOUTH LOUISIANA

ASCENSION PARISH

Bellettelene Oil Co.'s No. 1 Desiere Breaux, Darrow..... Drlg. 996 ft.
Big Dome Dlg. & Dev. Co.'s No. 1 Reardom, Darrow .... Drlg. 4,566 ft.
Triumph Oil Corp.'s No. 2 Lacey, Sec. 29-10s-4e ..... Rebuilding derrick to fish stuck drill pipe 2,515 ft.

CALCASIEU PARISH

Wilfred LaHay's No. 2 James, Section 14-10s-13w ..... Shut down 3,365 ft.
J. O. Davis' No. 1 Mims, Section 20-9s-7w ..... No report.

CAMERON PARISH

Shell Petroleum Corp.'s No. 11 Watkins, Black Bayou .. Casing cem. 1,244 ft.

EVANGELINE PARISH

The Texas Company's No. 1 Guillory, Pine Prairie ..... Shut down 2,973 ft.

IBERIA PARISH

Gulf Refining Co.'s 9-Z State, Loreauville ..... Drlg. 846 ft.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 3 Wilbert, White Castle .... Drlg. sandy shale and lime 5,467 ft.
Standard Oil Co.'s No. 2 Wilbert, Bayou Blue ..... No report.
Standard Oil Co.'s No. 3 Wilbert, Bayou Blue ..... Canal dredged to location.
Standard Oil Co.'s No. 1 Schwing, Bayou Blue ..... No report.
Standard Oil Co.'s No. 2 Schwing, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 3 Schwing, Bayou Blue ..... Location.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue ..... Location.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Derrick.

PLAQUEMINE PARISH

The Texas Company's No. 2 Garden Island Bay, Sec. 107-23s-32e ..... Location.
Humble Oil & Refg. Co.'s No. 1 State, Sec. 2-20s-26e..... Location.

ST. BERNARD PARISH

St. Bernard Oil & Gas Co.'s No. 1 fee, Sec. 15-14s-15e.... Location.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Reynaud, Sec. 1-12s-4e ..... Location.

ST. LANDRY PARISH

Gulf Refining Co.'s No. 1 Gaudet, Point Barre ..... Oil sand 3,799-3,828 ft.; to test.
The Texas Company's No. 2 Botney Bay, Point Barre.... Set 2 joints screen 3,618 ft.; flowed 100 bbls. an hour for 30 minutes; 6,000,000 ft. gas; waiting orders.

ST. MARTIN PARISH

Ohio Oil Co.'s No. 3 Martin, Hager dome ..... Standing 4,490 ft.
The Texas Company's No. 1 Fee, Hager Dome ..... Shut down; high water 1,233 ft.
The Texas Company's No. 2 St. Martin, Hager ..... Rig standing; high water.

ST. TAMMANY PARISH

St. Tammany Oil Co.'s No. 2 Fritchie, Sec. 35-8s-14e .... Oil sand 1,895-1,903 ft.

TANGIPAHOA PARISH

Joan Development Co.'s No. 1 Hilton, Sec. 20-9s-9e ..... Gumbo 2,432 ft.

TERREBONNE PARISH

Southern Gas Co.'s No. 1 Waterproof, Houma ..... Testing gas sand 1,652 ft.
The Texas Company's No. 1 L. L. & E., Four Isle Bayou .. Drlg. sand and shale 480 ft.
The Texas Company's No. 1-A Timbalier Bay, Section 19-23s-20e ..... Shut down for repairs 2,110 ft.
The Texas Company's No. 2-A Dog Lake Bayou, 400 ft. south of No. 1 ..... Location.
The Texas Company's No. 1-B Dog Lake, Sec. 6-22s-16e .. Location.
The Texas Company's No. 1-B Lake Pelto, Section 8-23s-18e ..... Set 9¼-in. casing to test oil sand 1,268 ft.
The Texas Company's No. 1 Taylor, East Bay Junop Dome ..... Driving piling.
The Texas Company's No. 2-A Lake Barre, Section 30-21s-20e ..... Location.
The Texas Company's No. 2B Bay Coon Road, Sec. 17-22s-18e ..... Location.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 73)

Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C. ..... Pay 3,755-56 ft.; 6⅝-in. casing set 3,451 ft.; fishing at 3,785 ft.
Ray E. McCamey et al's No. 1 McCutchen, 2,300 ft. S and 785 ft. W of NE cor. of T. J. Hines Sur. No. 4 .. Underreaming 2,700 ft.

CONCHO COUNTY

Duffy et al's No. 1 Gilliam, 1,520 ft. N and 1,120 ft. W of SE cor. Sec. 21, Blk. 10, H.&T.C.R.R. ..... Spudded and shut down.
Jones & Leiner's No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,878 ..... Top lime 1,770 ft.; top pay 1,775-80 ft.; 18 ft. oil in hole; to test; cleaning out 1,975 ft.

CRANE COUNTY

Duffey & Skelly's No. 1 University, 2,310 ft. from S, 330 ft. from E Sec. 45, Blk. 30, University Land .... Rigging up.
Gulf Prod. Co.'s No. 7 Waddell, Sec. 10, Blk. B-23, 2,640 ft. from S, 330 ft. from W ..... Top salt 1,108 ft.; slight show gas 2,285 ft.; 1,000,000 ft. gas at 3,065 ft.; drlg. 3,345 ft.; 1,000,000 ft. gas; top lime 2,972 ft.
Humble Oil & Ref. Co.'s No. 1-D University, 2,310 ft. from N and 1,650 ft. from W Sec. 34, Blk. 30 ..... Location.
Prairie Oil & Gas Co.'s No. 7 University, 330 ft. from N, 330 ft. from W Sec. 39, Blk. 30 ..... Location.
Prairie Oil & Gas Co.'s No. 8 University, 330 ft. from S, 330 ft. from W Sec. 39, Blk. 30 ..... Location.
Tidal Oil Co.'s No. 9 University-I, 1,320 ft. from E, 771 ft. from S Sec. 43, Blk. 30 ..... Drlg. 1,245 ft.; top salt 1,140 ft.

CROCKETT COUNTY

Eppenaur et al's No. 2 Noelke, 500 ft. N and 1,250 ft. E of SE cor. Sec. 64, Blk. 1, I.&G.N.R.R. Sur. ..... Shut down 600 ft.
Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor. Sec. 33, Blk. 1, I.&G.N. Sur... Shut down 1,002 ft.
W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.A. Sur. ..... Shut down 800 ft.
W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,663 ft.; shut down 1,755 ft.
W. A. Moncrief et al's No. 1 Massie, 1,170 ft. N and 1,320 ft. E of SW cor. Sec. 47, Blk. UV, G.C.&S.F. Sur. ..... 3,000,000 ft. gas 1,198 ft.; underreaming 1,300 ft.
Taylor-Link's No. 3 Powell, 1,000 ft. S of No. 2, Sec. 52, Blk. BB, E.L.&R.R. Sur. ..... Rigging up.

CULBERSON COUNTY

Deep Rock Oil Co.'s No. 3 Kloh, 380 ft. N and 1,388 ft. W Sec. 39, Blk. 59 ..... Moving in machine.
Hickey & Stiver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W Sec. 20, Blk. 82 ..... Small oil show 1,331 ft.; shut down 2,275 ft.
West Coast Oil & Exploration Co.'s No. 1 McGregor, C NW Sec. 14, Blk. 31 ..... Shut down 620 ft.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; drlg. 2,440 ft.; gas show and 2 bbls. salt water per hour at 2,177 ft.

ECTOR COUNTY

Anderson's No. 1 fee, 1,320 ft. E along N line Sec. 19, and 150 ft. N at right angles with line Sec. 18, Blk. B-16, Public School Land ..... Location.

EL PASO COUNTY

Sillex's No. 1 Malone, 2,200 ft. SW and NW Sec. 46, J. M. Day Sur. ..... Shut down 1,010 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlow, Sec. 60, V-8, J. C. Clift Sur. ..... Drlg. 2,400 ft.

FISHER COUNTY

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. Sur. ... Shut down 2,000 ft. for orders.
Cranfill & Reynolds' No. 1 Flanagan, 990 ft. from S and W of Sec. 200, Blk. 1, B.B.B.&C. Sur. ..... Rig.
Gilliman-McMurray & French's No. 1 Cleveland, 781 ft. N and 1,336 ft. W of SE cor. Sec. 116, Blk. 2, H.&T.C. Sur. ..... Fishing 3,565 ft.
Magnolia Pet. Co.'s No. 1 Lee, Sec. 357, 2,310 ft. from N and 4,286 ft. from W ..... Drlg. 990 ft.
Mesa Oil Co.'s No. 1 Griffin, 849 ft. N and 465 ft. E of NE cor. Sec. 20, School Land ..... Shut down 2,985 ft.
Roeser & Pendleton's No. 2 Haught, Sec. 191, Blk. 1, 590 ft. from N and 1,320 ft. from W ..... Drlg. 880 ft.
Texas-Phillips' No. 1 Hall, 330 ft. N and W of SE cor. Sec. 6, Blk. 20 ..... Hole full water 3,185 ft.; shut down 3,595 ft.
White Eagle Oil & Ref. Co.'s No. 1 Hughes, 4,942 ft. S and 560 ft. W of NE cor. Cosby Sur. 220 ..... Drlg. 2,556 ft.

GARZA COUNTY

Emerald Oil Co.'s No. 1 J. C. Bargsley, 2,310 ft. from E and 330 ft. N of SW cor. Sec. 135, Blk. 5, H.&G.N... Location.
Emerald Oil Co.'s No. 1 J. S. Reed, 990 ft. W and 330 ft. N of SE cor. Sec. 135, Blk. 5,, H.&G.N.R.R. Sur. ..... T. D. 2,546 ft.; 300 ft. oil in hole; T. P. 2,527 ft.; swabbed 66 bbls. in 6 hours after shot; shot 180 qts. 2,485-95 ft. and 2,503-40 ft.; swabbed 35 bbls. oil and 1 bbl. salt water; swabbing.
Gulf Prod. Co.'s No. 1 Street, C Sec. 7, Blk. 8, H.&G.N. R.R. Sur. ..... Drlg. 750 ft.

GLASSCOCK COUNTY

A. & F. Oil Co.'s No. 1 Turner, 2,310 ft. from N and 330 ft. from E Sec. 19, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 1,195 ft.
California Co.'s No. 1 Turner, 2,310 ft. from N and E Sec. 46, Blk. 33, Twp. 2s ..... Location.
Chas. Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 2s, T.&P. Sur. .. Shut down 500 ft.
Gibson-Johnson's No. 1 Dean, 1,320 ft. S and E of NW cor. Sec. 2, Blk. 33, Twp. 2s, T.P.R.R. Sur. ..... Top salt 1,075 ft.; top lime 2,560 ft.; shut down 2,572 ft.
Houston Oil Co.'s No. 1 McDowell, 330 ft. from N and 2,310 ft. from E Sec. 30, Blk. 33, Twp. 2s ..... Drlg. 455 ft.
Kirby Pet. Co.'s No. 1 Phillips, Sec. 23, Blk. 33, Twp. 2s, 330 ft. from N and 2,310 ft. from W..... Rig.
Penn Oil Co.'s No. 1 Schaffer, 1,320 ft. from S, 2,640 ft. from E Sec. 4, Blk. 32, Twp. 3s, T.P.R.R. Sur. ..... Rig.
Texas State Oil Co.'s No. 1 Coffey, 330 ft. from S and 990 ft. from E Sec. 19, Blk. 34, Twp. 2s ..... Drlg. 990 ft.
World Oil Co.'s No. 3 McDowell, Sec. 21, Blk. 34, Twp. 2s, 990 ft. from N, 2,310 ft. from W ..... Location.

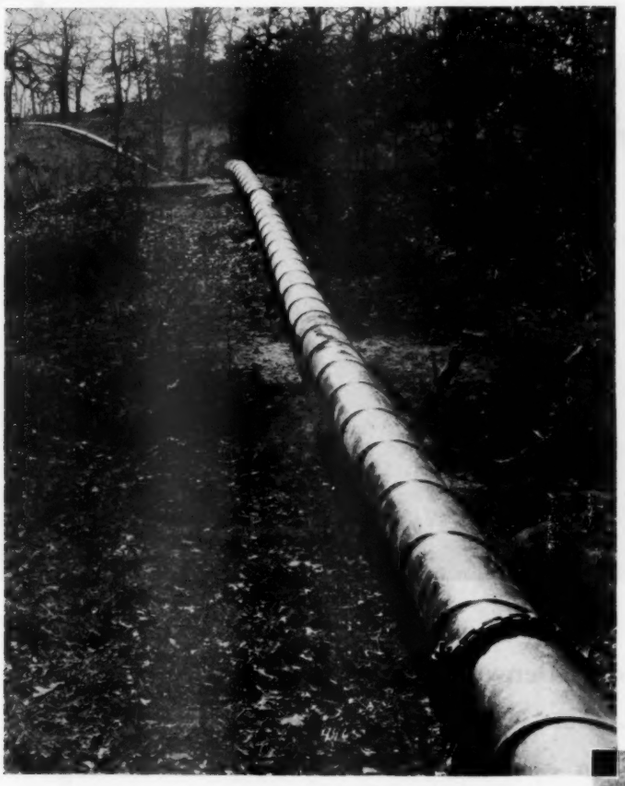
HOWARD COUNTY

Amerada Pet. Corp.'s No. 10 Roberts, Sec. 137, Blk. 29, 990 ft. from N and 330 ft. from E ..... Shut down 2,918 ft.; show oil 2,912-18 ft.
Amerada Pet. Corp.'s No. 11 Roberts, 650 ft. from N and 200 ft. from E Sec. 128, Blk. 29, W.&N.W.R.R. Sur... Location.
Amerada Pet. Corp.'s No. 2 Stewart, 330 ft. from S, 990 ft. from E Sec. 130, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
California Co.'s No. 7 Roberts, 874 ft. S, 990 ft. E Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Rigging up.
O. Chalk's No. 4 fee, 1,650 ft. S and W of Sec. 124, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
Cosden Oil Co.'s No. 5 Roberts-A, Sec. 129, Blk. 29, 200 ft. from S and 2,440 ft. from E ..... Moving in rotary; total depth 262 ft.; shut down.
F. H. E. Oil Co.'s No. 11-B Dora Roberts, 1,700 ft. S and 2,310 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Total depth 2,615 ft.; preparing to pump.
F. H. E. Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 136, Blk. 29 ..... Set 6-in. casing 2,930 ft.; shut down.
Fuhrman Pet. Co.'s No. 1 Read, 2,310 ft. N and 330 ft. E of SW cor. Sec. 41, Blk. 32, Twp. 1n, T.&P.R.R. Sur... Moving in material.
Gibson & Johnson's No. 1 Read, 660 ft. N and W of SE cor. Sec. 47, Blk. 30, Twp. 1n, T.&P.R.R. Sur. ..... Top pay 2,703-08 ft.; shut down 2,949 ft.; 1,500 ft. oil in hole.
Houston Oil Co.'s No. 1 L. S. McDowell, 2,310 ft. W and 330 ft. S of NE cor. Sec. 30, Blk. 33, Twp. 2s, T.&P. R.R. Sur. ..... Location.
Humble O. & R. Co.'s No. 3 Clay, Sec. 138, Blk. 29, 1,650 ft. from N and 330 ft. from W ..... Drlg. 2,955 ft.; show oil 2,933-40 ft.
Magnolia Pet. Co.'s No. 2 Hyman, 1,320 ft. W and 1,220 ft. N of SE cor. Sec. 88, Blk. 29, W.&N.W. Sur. ..... Cleaning out 1,317 ft.; bailed 15 bbls. oil 12 hours after shot.
Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Shut down 2,927 ft.
Mariand Prod. Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor. Sec. 138, Blk. 129, W.&N.W.R.R. Sur... Shut down 2,675 ft. with show oil 2,595-2,675 ft.
McGinley & Seigler's No. 1 Barnett, 330 ft. S and E of NW cor. Sec. 928, Blk. 29, W.&N.W.R.R. Sur. ..... Fishing 725 ft.
McGinley et al's No. 2 Hyman, Sec. 92, Blk. 29, W.& N.W.R.R. Sur. ..... Rigging up.
Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W Sec. 45, Blk. 33 ..... Spudded and shut down.
Merrick & Lamb's No. 8 Clay, 1,120 ft. from S, 1,100 ft. from E line of Sec. 126, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
Moody Corp.'s No. 14 Roberts-E, Sec. 136, Blk. 29, 1,650 ft. from N, 990 ft. from E ..... Drlg. 1,422 ft.
Schermerhorn Oil Co.'s No. 6 D. Roberts-A, 1,650 ft. S. and 330 ft. W of NE cor. Sec. 137, Blk. 29, W.& N.W.R.R. Sur. ..... Shut down 3,047 ft.; top pay 2,911 ft.; to test.
Superior Oil Co.'s No. 14 Dora Roberts-B, 2,310 ft. E and 280 ft. S of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Shut down 2,601 ft.
Superior Oil Co.'s No. 15 Dora Roberts-B, 2,310 ft. S and 380 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. R.R. Sur. ..... Fishing 2,565 ft.
Ward Oil Co.'s No. 7 Roberts, 2,310 ft. N and 380 ft. E of SW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 2,640 ft.; show oil 2,341-51 ft.

HUDSPETH COUNTY

Western States Oil Co.'s No. 1 Lockhart & Roseborough, C SE Sec. 5, School Blk. 21 ..... Drlg. 1,200 ft.
California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 19, Blk. E ..... Total depth 1,640 ft.; straight-reaming.
Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Shut down 2,685 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ..... Shut down 3,140 ft.; fishing.

VICTAULIC COUPLINGS



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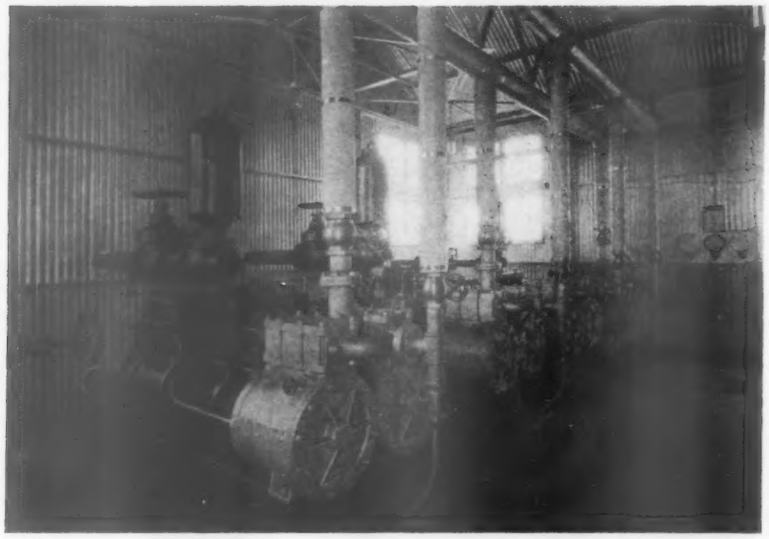

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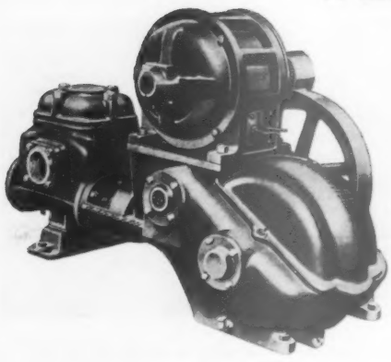

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IRION COUNTY

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W Subd. 8 ... Spudded and shut down.

Kimbrough & Flinchbaugh's No. 1 Tankersley, 160 ft. S and 200 ft. W of NE cor. Sec. 712, Ford Willig Sur. ... Show oil 1,318-29 ft.; total depth 1,339 ft.; swabbing 15 bbls.; underreaming; 500 ft. fluid in hole, 40 per cent water; bailing 8 bbls. per day; preparing to pump.

Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S, 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land ... Set 6-in. casing 1,360 ft.; cleaning out; T. P. 1,318 ft.; 500 ft. fluid in hole; 40 per cent water; shut down 1,420 ft.

Pecos Valley Oil Co.'s No. 2 Stocks, Sec. 19, Blk. 3, 1,020 ft. from S and W, H.&T.C. Sur. ... Underreaming 1,202 ft.

Webb's No. 2 Nutt, 200 ft. from N and 711 ft. from E Subd. 5 ... Location.

Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. ... Drlg. 7,020 ft.

Whitmer et al's No. 1 Meyers, 990 ft. from S and E Sec. 10, Blk. 17, H.&T.C.R.R. ... Location.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft. W line Sec. 345, H.&T.C. Sur. ... Show gas 3,271 ft.; fresh water 3,000-05 ft.; underreaming 5 3/16-in. casing; drlg. 4,005 ft.; 600 ft. fresh water 4,000-26 ft.

JONES COUNTY

J. E. Brewer's No. 1 Goodman, 150 ft. N and E of SW cor. Sec. 15, Blk. 19, T.&P.R.R. Sur. ... Location.

Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 310 ft. E of SW cor. S half NW Sec. 50, Blk. 18, T.&P. Sur. ... Rigged up and shut down.

Cosden-Herbert et al's No. 2 Bickley, 330 ft. N and W of SE cor. of S half NW Sec. 50, Blk. 18 ... Rig.

W. G. Clark et al's No. 1 Collins, 330 ft. S and E of NW cor. Sec. 29, Blk. 18, T.&P.R.R. Sur. ... Rig.

Humble Oil & Ref. Co.'s No. 2 Bickley, 330 ft. S and W of NE cor. of SW Sec. 50, Blk. 18, T.&P.R.R. Sur. ... Spudding.

McGinley Corp.'s No. 1 Whittemore, 660 ft. N and W of SE cor. SE NE Sec. 39, B.B.B.&C. ... Running 6-in. casing 2,432 ft.

McNeeley et al's No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Subdivision 20, A-164, DeWitt Co. School Land ... Spudded and shut down.

Phillips Pet. Corp.'s No. 2 M. C. Lan, 990 ft. from N and W line Sec. 15, Blk. 19, T.P.R.R. Sur. ... Rigging up.

Sedgwick Oil & Gas Co.'s No. 1 Brown, 660 ft. N and 1,320 ft. E of SW cor. Sec. 9, Blk. 1, T.&N.O. Sur. ... Location.

The Texas Company's No. 2 Camp, 2,829 ft. N and 323 ft. W of SE cor. Camp. 189.5-acre lease, Sec. 13, T.&P. Sur., Blk. 19 ... Drlg. 1,475 ft.

The Texas Company's No. 3 Camp, 1,189 ft. S and 326 ft. W of NE cor. of Sec. 13, Blk. 19, T.&P. ... Drlg. 2,545 ft.

U. L. Tomberlin's No. 1 Horn, 1,950 ft. N and 600 ft. E of SW cor. of 502 ac. of Penney Sur. A-283 ... Shut down 2,507 ft.

E. M. Treat Oil & Gas Co.'s No. 1 Hodge, 750 ft. S and 2,714 ft. W of NE cor. of S half A. Bell Sur. ... Underreaming 1,760 ft.

W. D. Wells et al's No. 1 Britton, 150 ft. N and 890 ft. E SW cor. 640-ac. tract, H.&W. Sur. 354-355 ... Underreaming 3,000 ft.

White Eagle Oil & Ref. Co.'s No. 1 W. B. Teague, 933 ft. N and W of SE cor. Sec. 30, Austin & Williams Sur. No. 339 ... Drlg. 2,110 ft.

KIMBLE COUNTY

C. L. Bryant and others' No. 1 Lambert, 700 ft. from N and W line of F. Lotta Sur. ... Location.

Lindsay Bros.' No. 1 Anderson, Sec. 167, 1,320 ft. from N and E ... Drlg. 537 ft.

McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 300 ft. W of SE cor. Robert Cochran Sur. ... Fishing 730 ft.

LOVING COUNTY

Lockhart & Co.'s No. 2 Bowen-Wells, 990 ft. NW and 330 ft. SE Sec. 92, Blk. 1, W.&N.W.R.R. Sur. ... Drlg. 630 ft.

Lockhart & Co.'s No. 1 Hayzell, 2,792 ft. SW of NE line and 660 ft. NW of SE line Sec. 84, Blk. 33, H.&T.C. R.R. Sur. ... Top salt 700 ft.; drlg. 2,300 ft.

Lockhart & Co.'s No. 2 Hayzell, 330 ft. from NE and SE line of Sec. 84, Blk. 33, H.&T.C.R.R. Sur. ... Top salt 700 ft.; drlg. 3,300 ft.

Lockhart & Co.'s No. 1 Johnson, 660 ft. S and 1,980 ft. W of NE cor. Sec. 20, Blk. 56, Twp. 1, T.&P.R.R. Sur. ... Top salt 1,110 ft.; drlg. 3,305 ft., black lime.

Lockhart & Co.'s No. 1 Wheat-H, 990 ft. from NE and SE lines Sec. 85, Blk. 33, H.&T.C.R.R. Sur. ... Top salt 720 ft.; set 8¼-in. casing 2,295 ft.; show oil 4,147 ft.; swabs 10 bbls. per day; total depth 4,197 ft.; shot 110 quarts 4,150-80 ft.; flowing 2 bbls. salt water hourly; made 10 bbls. oil while cleaning out.

LYNN COUNTY

George McCamey's No. 1 Edwards, 165 ft. N and E Sec. 5, Blk. 2, L.S.&W. Sur. ... Top salt 2,140 ft.; oil show 1,580-90 ft.; cem. 8¼-in. casing 2,500 ft.

MENARD COUNTY

Cromwell & Duffey's No. 1 Winslow, C SE Sec. 32, T.&N.O. Sur. ... Fishing 1,610 ft.

MIDLAND COUNTY

Phillips Pet. Corp.'s No. 1 Stokes, 440 ft. S and W of NE cor. S. Beall Sur. No. 101, Blk. 37, Twp. 2s, T.P.R.R. Sur. ... Top salt 1,610 ft.; top lime 3,720 ft.; fishing 3,915 ft.; 1,500 ft. fluid in hole; drlg. 4,055 ft.; rainbow oil 3,915 ft.

Shoupe et al's No. 1 Roy Parks, 1,320 ft. N and W Sec. 34, Blk. 41 ... Top lime 4,744 ft.; shut down 4,980 ft.; to deepen.

MITCHELL COUNTY

The California Co.'s No. 2, Clark Lease No. 2, 2,190 ft. N and E of SW cor. Sec. 14, Blk. 28, Twp. 1n, T.P.R.R. Sur. ... Top pay 2,962 ft.; show oil 2,405 ft.; 2,800 ft. oil in hole; shut down 3,115 ft. to test.

California Co.'s No. 7 Foster, Lease No. 1, Sec. 6, Blk. 29, Twp. 1s, T.P.R.R. ... Drlg. 1,450 ft.

California Co.'s No. 1 Handley, 2,310 ft. from S, 1,650 ft. from E Sec. 1, Blk. 28, Twp. 1n, T.&P. Sur. ... Drlg. 1,120 ft.

Seiger's No. 1 Scott, C of NE of SW Sec. 36, Blk. 17, S.P.R.R. Sur. ... Shut down 730 ft.

Republic Prod. Co.'s No. 1 Scott, 330 ft. N and E of SW Sec. 20, Blk. 17, S.P.R.R. Co. ... Drlg. 1,365 ft.

Simms Pet. Co.'s No. 1 Elwood, C SE of Sec. 29, Blk. 18, S.P.R.R. Sur. ... Underreaming 10-in. casing 1,073 ft.; drlg. 4,340 ft.

Spence et al's No. 1 Brown, 2,040 ft. E and 1,320 ft. S NW cor. Sec. 27, Blk. 25, T.&P. ... Crooked hole 1,910 ft.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. ... Drlg. 4,085 ft.

Westyde Investment Co.'s No. 1 Elwood, C SW Sec. 38, Blk. 16, S.P.R.R. Sur. ... Underreaming 1,050 ft.

NOLAN COUNTY

L. G. Bradstreet et al's No. 1 Kuteman, C NW Sec. 95, Blk. X, T.&P. Sur. ... Drlg. 2,300 ft.

Phillips Pet. Co.'s No. 1 Plunkett, 330 ft. N and W of SE cor. NW Sec. 66, Blk. 23, T.&P. Sur. ... Drlg. 2,490 ft.

PECOS COUNTY

H. Adams' No. 1 University, 1,650 ft. from N, 150 ft. from E Sec. 12, Blk. 17 ... Drlg. 980 ft.; top salt 930 ft.

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. 2, T.S.Ry Sur. ... Top salt 814 ft.; top lime 1,602 ft.; 3,400,000 ft. gas from 1,611-26 ft.; spraying very little oil; sulphur water 1,652 ft.; shut down 1,655 ft.

Atlantic O. P. Co.'s No. 1 Trees, 330 ft. from N and 990 ft. from W line Sec. 108, Blk. 8, H.&G.N.R.R. Sur. ... Drlg. 1,845 ft.; show oil 1,570-76 ft.

Cosby's No. 2 Smith, Sec. 24, Blk. 194, 1,650 ft. from N, 330 ft. from E, G.C.&S.F.R.R. Sur. ... Drlg. 480 ft.

Buell & Hagan's No. 1 University-B, 330 ft. N and 2,310 ft. W of SE cor. Sec. 36, Blk. 18, University Land ... 2,500,000 ft. gas; cleaning out; shut down 1,332 ft.; hole full oil; to put on pump.

Cowboy Evans' No. 1 Pecos Valley, 2,310 ft. from NW line, 990 ft. from SW line of Sec. 36, Blk. 3, H.&T.C. R.R. Sur. ... Drlg. 350 ft.

Crowley's No. 1 Heiner, 2,400 ft. each way from N and E lines Sec. 589, G.C.&S.F.R.R. Sur. ... Shut down 1,300 ft.

Clayton Williams' No. 1 Sanford, 160 ft. from NW line, 1,150 ft. from SW line Sec. 55, Blk. 10, H.&G.N. ... Drlg. 710 ft.

Doran & McGee's No. 1 Pecos Valley, Sec. 34, Blk. 3, H.&T.C. ... Top salt 1,080 ft.; shut down 1,541 ft.; show gas 1,515 ft.; show oil 1,535-40 ft.

Gibson-Johnson's No. 1 White & Baker, 330 ft. from N, 990 ft. from E Sec. 3, Blk. 179 ... Drlg. 350 ft.

Independent Oil & Gas Co.'s No. 1 Iowa Realty Trust Co., 2,310 ft. each way NE SE line Sec. 23, Blk. 10, H.&G.N.R.R. ... Drlg. 722 ft.

Sam Kitts and others' No. 1 Sherbino, 330 ft. from N and 990 ft. from W line Sec. 52, Blk. C-4, G.C.&S.F. R.R. ... Fishing 250 ft.

Seminole Oil Co.'s No. 1 Pecos Valley, Sec. 22, Blk. 10, 360 ft. from SW, 2,280 ft. from SE, H.&G.N. Sur. ... Location.

Marland Oil Co.'s No. 1 University, Sec. 10, Blk. 17, 1,620 ft. from N, 1,020 ft. from E ... Rigging up.

Matador Oil Co.'s No. 3 Smith, 2,310 ft. from N and 990 ft. from E lines, Sec. 24, Blk. 194, G.C.&S.F.R.R. Sur. ... Moving in machine.

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. ... Shut down 1,442 ft.

McMan Oil & Gas Co.'s No. 6 Smith, C Sec. 25, Blk. 194, 2,127 ft. from N and 1,740 ft. from W ... Shut down 1,753 ft.; top pay 1,748 ft.

McMan Oil & Gas Co.'s No. 7 Smith, 660 ft. from S of C line, 990 ft. from E Sec. 25, Blk. 194 ... Drlg. 825 ft.

R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. ... Drlg. 565 ft.

Moncrief et al's No. 1 Tippett, 330 ft. from S. 330 ft. E of C Sec. 36, Blk. 12, H.&G.N. ... Location.

Moncrief et al's No. 1 Toborg, 330 ft. from S. 330 ft. W of C of Sec. 539, Blk. 1 ... Location.

Perrin et al's No. 1 Eaton, 150 ft. each way from NE and NW lines Sec. 27, Blk. 39, H.&T.C. Sur. ... 18,000,000 ft. gas 1,490-1,502 ft.; spraying salt water from behind 8¼-in. casing set at 1,180 ft.; shut down 1,502 ft.; 5 3/16-in. casing set on bottom with last joint perforated; 18,000,000 ft. gas shut in.

Phillip Pet. Corp.'s No. 1 Bowser, 250 ft. from N and E Sec. 77, Blk. OW, G.C.&S.F.R.R. ... Drlg. 365 ft.; fishing.

Plymouth Oil Co.'s No. 2 Perry, Sec. 29, Blk. 178, 330 ft. from N and E cor. ... Set 6-in. casing; show oil and water; shut down 1,817 ft.; show oil 1,772-76 ft.; 1,200 ft. oil in hole from 1,792-96 ft.; hole fills at rate of 100 ft. per hour.

Phillips Pet. Co.'s No. 1 Pryor, 440 ft. S and E of NW cor. Sec. 78, Blk. OW, T.M.R.R. Sur. ... Top pay 1,345 ft.; 400 ft. oil in hole; drlg. 1,648 ft.

Phillips Pet. Co.'s No. 2 Ramsey, 990 ft. S and 1,980 ft. W of NE cor. Sec. 17, Blk. 194, G.C.&S.F. Sur. ... Shut down 1,672 ft.; top pay 1,-645 ft.; 30 bbls. per hour.

Rio Pecos' No. 2 Yates, 5,130 ft. from E, 510 ft. from S Sec. 543, Blk. 1 ... Shut down 845 ft.

Rowen & Long's No. 1 McDowell, 1,170 ft. from N and 2,490 ft. from E Sec. 46, Blk. 2, H.&G.N. ... Location.

T. G. Shaw's No. 1 Yates, Sec. 58, Blk. 1, I.&G.N.R.R. Sur. ... Location.

B. J. Spikes' No. 1 George Brown, 2,490 ft. SE and SW line Sec. 8, Blk. 3 ... Show oil 1,180-90 ft.; shut down 1,864 ft.

Shell Oil Co.'s No. 1 University, 330 ft. S and 2,310 ft. E of Sec. 29, Blk. 16 ... Show gas 990 ft.; est. 150,000 ft. at 1,024 ft.; underreaming 1,660 ft.

Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line Sec. 1, Blk. 117, G.C.&S.F. ... Shut down 1,200 ft.

Southern Crude O. P. Co.'s No. 1 Jackson T-139, Sec. 25, Blk. 3, 1,487 ft. from NE, 2,518 ft. from SE cor. ... Location.

Talbot and others' No. 1 Unsicker, 150 ft. each way from NE and SE cor. line of Sec. 25, Blk. 10, H.&G.N. Sur. ... Material on ground.

Taylor Link Oil Co.'s No. 1 University, 330 ft. from S and E Sec. 30, Blk. 16, University ... Slight show oil at 935 ft.; 250,000 ft. gas from 1,195 to 1,204 ft.; bailed 22 bbls. dead oil; total depth 1,625 ft.; top pay 1,613 ft.; flowing 75 bbls. 15 hours.

Tidal Oil Co.'s No. 1 University, 1,320 ft. from S and W lines of Sec. 16, Blk. 20, University Land ... Top salt 786 ft.; top lime 1,270 ft.; drlg. 1,375 ft.

Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ... Top lime 1,155 ft.; total depth 4,407 ft.

World Oil Co.'s No. 1 Kloh, 2,310 ft. from N and E line Sec. 47, Blk. 48, Twp. 8, T.P.R.R. Sur. ... Total depth 3,105 ft.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N, 1,188 ft. from E Sec. 245, Blk. 4 ... Location.

Eastland Oil Co.'s No. 1 Tootle, C Sec. 17, Blk. 1, D.P. R.R. Sur. ... Spudded; shut down.

Phillips Pet. Co., Empire G. & F. Co., Delmar Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ... Drlg. 3,105 ft.; slight oil show and gas at 2,707 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor. Sec. 1, Blk. 3, University Land. ... Shut down 2,636 ft.

Kemrow Co.'s No. 1 Sawyer Cattle Co., 1,320 ft. from N and 1,980 ft. from E line Sec. 8, J. G. Robinson Sur. ... Location.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ... Total depth 2,900 ft.; shut down.

Earl Henby's No. 1 Brooks, 1,980 ft. N and 660 ft. W Sec. 16, Blk. 59 ... Drlg. 120 ft.

Southern Crude O. P. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor. Sec. 22, Blk. 51 ..... Hole full water 1,275 ft.; cem. 12½-in. casing 1,463 ft.; drlg. 1,520 ft.

David R. Thompson's No. 1 A. A. Eddins ..... Fishing casing 5,658 ft.; underreaming 8¼-in. casing.

Robert Penn et al's No. 1 Bowles, 2,310 ft. SW of NE cor. Sec. 36, Blk. 50, Twp. 8, T.&P.R.R. Sur. ..... Top salt 1,725 ft.; hole full fluid 5,176 ft.; underreamed 6-in. cas-5,225 ft.; drlg. 5,530 ft.; 2 bbls. oil per day from 5,241-58 ft.

Lee O. White et al's No. 1 Kloh-Rumsey, 660 ft. S and E of NW cor. Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. ... Cem. 10-in. casing 1,485 ft.; total depth 1,530 ft.

RUNNELS COUNTY

Herbert Oil Co.'s No. 1 Currie, 1,866 ft. SE of NW line, 335 ft. SW of NE line Gray Carroll Sur. ..... Drlg. 1,820 ft.

Independent Oil & Gas Co.'s No. 1 Will Rollwitz, 330 ft. S and W of NE cor. S half M. Salinas Sur. No. 20½ .. Drlg. 3,928 ft.; hole full salt water.

McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. ..... Shut down 1,185 ft.

Nourse & Tilton's No. 1 Cramer, 200 ft. S, 600 ft. E of NW cor. G.C.&S.F. Sur. No. 2 ..... Running 5-in. casing 3,815 ft.; fishing 3,980 ft.

Vacuum Oil Co.'s No. 4 McMillan, 555 ft. S and 717 ft. W of NE cor. Lot 22, Domingo Diaz Sur., No. 532 .... Location.

SCHLEICHER COUNTY

Fort McKavet's No. 1 Tisdale, Sec. 1,499, River Section, 3,630 ft. from S, 150 ft. from W ..... Set 6-in. casing 3,023 ft.; shut down 3,135 ft.

Interstate's No. 1 Whitten, 1,320 ft. from N and W Sec. 35, Blk. LL, T.C.R.R. Sur. ..... Shut down 3,540 ft.

Underwood's No. 1 Tisdale, 2,095 ft. N and 1,185 ft. from E Sec. 74, Blk. LL ..... Spudded and shut down.

SCURRY COUNTY

Cottingham & Briscoe's No. 1 Truss, C SE Sec. 147, Blk. 97 ..... Location.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down 300 ft.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Drlg. 3,150 ft.

Texas-Canadian's No. 1 Moore, 1,320 ft. from S and W Sec. 379, Blk. 97 ..... Location.

STERLING COUNTY

F. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. ..... Show oil 1,296-98 ft. and 1,356-58 ft.; fishing 2,182 ft.; shut down 2,503 ft.

SUTTON COUNTY

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor. Sec. 25, G.C.S.D.&N.G.R.R. Sur. .... Fishing 6,635 ft.; making 1,500,-000 ft. gas 6,635 ft.

L. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 52, Blk. A, T.&P. Sur. ..... Set 15-in. casing 530 ft.; fishing 2,590 ft.

TAYLOR COUNTY

V. B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Running 5-in. casing 4,120 ft.

Magnolia Pet. Co.'s No. 1 Hammer ..... Drlg. 2,780 ft.

Root Drlg. Co.'s No. 1 Martin, 990 ft. E and 1,650 ft. N of SW cor. Sec. 30, Blk. 19, T.&P.R.R. Sur. ..... Drlg. 2,475 ft.

TERRELL COUNTY

Big-Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Spudded and shut down.

Keok Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.R.R. Sur. ..... Drlg. 2,525 ft.

Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.&R.R. Sur. ..... Shut down 520 ft.

Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 6⅝-in. casing 3,986 ft.; fishing 5,075 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 700 ft.

TERRY COUNTY

Kingsland O. P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Cannon and others' No. 1 Rust, 990 ft. S, 990 ft. W of NE cor. of Sec. 745 ..... Location.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer ..... Shut down 1,920 ft.

Williams et al's No. 1 Willeke, 2,500 ft. N and 75 ft. E .....

UPTON COUNTY

Dixie Oil Co.'s No. 30 Burleson, 990 ft. from N and 2,640 ft. from E Sec. 3, John Nidever ..... Location.

YOAKUM COUNTY

Weekly Oil Corp.'s No. 1 Knight, C NW Sec. 791, Blk. D, John Gibson Sur. ..... Drlg. 1,950 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,850 ft.

O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.

Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 2,450 ft.

Dyar Bros. et al's No. 1 Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P. Sur., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. Sur. ..... Shut down 2,920 ft.

Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y .. Set 15½-in. casing 767 ft.; set 10-in. casing 1,510 ft.; shut down 3,760 ft.

WARD COUNTY

Gulf Prod. Co.'s No. 2 Hutchins, 330 ft. N and E Sec. 7, Blk. O ..... Top salt 1,240 ft.; drlg. 2,500 ft.; 2,000,000 ft. gas.

Barstow Oil & Gas Co.'s No. 1 Monroe, Sec. 50, Blk. 33.. Spudded and shut down.

Gulf Prod. Co.'s No. 5 O'Brien, 330 ft. each way NW of SW Sec. 18, Blk. F, G.M.M.B.&A. Sur. ..... Top salt 1,273 ft.; drlg. 2,689 ft.; top pay 2,595 ft.

Gulf Prod. Co.'s No. 1 Wristen, 216 ft. NW, 1,107 ft. SE Sec. 18, Blk. 5 ..... Drlg. 500 ft.

Kemper-Kimberlin's No. 1 Thompson, 1,470 ft. NE, 150 ft. NW Sec. 15, Blk. 5 ..... Location.

E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Running 15-in. casing 291 ft.

Penn & Atlantic's No. 1 Pecos Mercantile Co., Sec. 16, Blk. 34 ..... Shut down 340 ft.

Shipley's No. 2 Hayzlett, 220 ft. SE and 1,570 ft. SW Sec. 17, Blk. 5, H.&T.C.R.R. Sur. ..... Location.

Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Location.

WINKLER COUNTY

American Maracaibo Co.'s No. 2 Hendricks-B, 1,980 ft. N and 1,650 ft. E of SW cor. Sec. 28, Blk. B-5 ..... Cem. 12½-in. casing 170 ft.; top lime 2,599 ft.; top pay 2,731 ft.; 2,000 ft. oil; increase 2,875 ft.; show water 2,928-31 ft.; running 6-in. casing 2,945 ft.; total depth 3,005 ft.; shut down.

V. T. Bolin's No. 2 Brown et al, 2,000 ft. S and W of NE Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; shut down 1,800 ft.; top salt 1,300 ft.

Gulf Prod. Co.'s No. 1 Daugherty, 330 ft. S and W of NW and W of Sec. 22, Blk. 26 ..... Top lime 2,429 ft.; top pay 2,745-50 ft.; flowed 45 bbls., 35 per cent water; total depth 2,750 ft.; rigging up standard tools.

Gulf Prod. Co.'s No. 1 Clapp, 330 ft. S and W Sec. 37, Blk. 26 ..... Drlg. 1,857 ft.

Gulf Prod. Co.'s No. 3 Hendricks, 330 ft. from N and 2,310 ft. W Sec. 44, Blk. 26, Public School Land ..... Building rig.

Humble O. & R. Co.'s No. 12 Hendricks-C, 1,980 ft. N and 1,325 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Top salt 1,580 ft.; top lime 2,478 ft.; cem. 8¼-in. casing 2,480 ft.; drlg. 3,665 ft.; gas blowout at 2,657 ft.

Kermit Dev. Co.'s No. 1 Carter, 640 ft. S, 2,227 ft. W Sec. 27, Blk. B-3 ..... Shut down 400 ft. to cure title.

Magnolia Pet. Co.'s No. 2 Scarborough, 1,620 ft. N and 990 ft. W SE cor. Sec. 1, Blk. C-22 ..... Top salt 1,125 ft.; drlg. 2,615 ft.

Shell Pet. Co.'s No. 6 Scarborough, 330 ft. N and W of SE cor. NW SE Sec. 1, Blk. C-22 ..... Top lime 2,580 ft.; gas at 2,928 ft.; drlg. 3,074 ft.; flowing 110 bbls. daily.

Skelly Oil Co.'s No. 3 Daugherty, 330 ft. W, 1,650 ft. S Sec. 22, Blk. 26, Public School Land ..... Rig.

Skelly Oil Co.'s No. 4 Daugherty, 990 ft. S, 330 ft. W Sec. 22, Blk. 26 ..... Rig.

Skelly Oil Co.'s No. 5 Daugherty, 1,326 ft. W, 2,310 ft. S Sec. 22, Blk. 26 ..... Location.

Skelly Oil Co.'s No. 2 Hendricks-C, 1,320 ft. N and 2,310 ft. W of SE cor. Sec. 10, Blk. B-12 ..... Top lime 2,636 ft.; show oil 3,034 ft.; hole full sulphur water 3,030-39 ft.; total depth 3,100 ft.; flowing 12,000 bbls. daily salt water.

Skelly Oil Co.'s No. 2 Leck, 2,310 ft. N and 330 ft. E SW cor. Sec. 22, Blk. 26 ..... Top lime 2,445 ft.; 8¼-in. casing 2,460 ft.; gas show 2,615 ft.; shut down 2,765 ft.; top pay 2,755-65 ft.; flowed 1,092 bbls. 12 hrs. open and 12 hrs. pinched.

Skelly Oil Co.'s No. 3 Leck, 1,375 ft. from S, 330 ft. from W of Sec. 22, Blk. 26 ..... Location.

Southern Crude O. P. Co.'s No. 5 Hendricks T-67-2-D, 990 ft. from W, 2,310 ft. from S, Sec. 28, Blk. 26.... Drlg. 2,445 ft.

Simms Pet. Co.'s No. 2 Sealey, 2,434 ft. S and 990 ft. W of NE cor. Sec. 50, G.M.M.&A. Sur. ..... Rotary rig.

Southern Crude O. P. Co.'s No. 2 Hendricks T-88-CX, Sec. 21, Blk. 26 ..... Cem. 8¼-in. casing 2,482 ft.; top lime 2,470 ft.; drlg. 2,771 ft.; flowing 172 bbls. net oil.

Southern Crude O. P. Co.'s No. 3 Hendricks T-88-CX, 2,310 ft. N and 330 ft. W of SE cor. Sec. 21, Blk. 26.. Top lime 2,457 ft.; cem. 8¼-in. casing 2,469 ft.; drlg. 2,650 ft.

Southern Crude O. P. Co.'s No. 6 Hendricks T-88-N, 1,320 ft. N and W of SE cor. Sec. 28, Blk. 26, School Land ..... Top lime 2,420 ft.; total depth 2,-829 ft.; running 6-in. casing; fishing.

Southern Crude O. P. Co.'s No. 2 Hendricks T-88-P, Sec. 28, Blk. 26 ..... Top lime 2,532 ft.; cem. 8-in. casing 2,549 ft.; drlg. plug.

Southern Crude O. P. Co.'s No. 3 Hendricks T-88-R, 1,320 ft. N and E of SW Sec. 27, Blk. 26 ..... Top lime 2,365 ft.; gas show 2,630 ft.; top pay 2,655 ft.; flowing 20 bbls. hourly; total depth 2,770 ft.; rigging up rotary.

Texas Canadian Oil Co.'s No. 1 Kloh-Rumsey, 1,320 ft. N and E of SW cor. Sec. 35, Blk. 46, T.&P.R.R. Sur.. Shut down 4,011 ft. for orders.

Tidal Oil Co.'s No. 1 Scarborough, 330 ft. S and E of NW SE SE Sec. 1, Blk. C-22 ..... Total depth 2,929 ft.; cem. 6-in. casing 2,921 ft.; rigging up standard tools; top pay 2,945-50 ft.; swabbing 25 bbls. daily 2,550 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 74)

Ryan Oil Co.'s No. 4 Block, 990 ft. from N line and 330 ft. from E line NE. Sec. 111, Blk. 4, L&G.N. Sur. . Drlg. 325 ft.

Skelly Oil Co.'s No. 15 Schafer, 330 ft. from S line and 330 ft. from W line NE. Sec. 198, Blk. 3, I.&G.N. .. Set 8-in. at 1,208 ft.

Stubblefield et als' No. 1 Garner, 330 ft. from S and E lines SE. Sec. 104, Blk. 4 ..... Spud and S.D.

Timmis et als' No. 2 Garner, 330 ft. from N line and 330 ft. from E line SW SW, Sec. 113, Blk. 4, I.&G.N. ... Drlg. 285 ft.

Travis et als' No. 1 D. A. Harrel, C NE NE, Sec. 162, Blk. 7, I.&G.N. Sur. ..... 250,000 ft. gas from 3,520-30 ft., drlg. 3,780 ft.

Ware et als' No. 1 Ware, 990 ft. S and 400 ft. E NW cor. Sec. 18, Blk. 3, A.B.&M. Sur. ..... Fish. 5,141 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur. ..... Rig blown down.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ..... S.D. 510 ft. for csg.

CHILDRESS COUNTY

C. L. Sloane et als' No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... S.D. 4,340 ft.

COCHRAN COUNTY

Marland Prod. Co.'s No. 1 Slaughter-A, 330 ft. from W and 430 ft. from S lines, League 130, Carson County School land ..... Set 10-in. csg. at 1,915 ft.

COTTLE COUNTY

Expltn. Co.'s No. 1 Richards ..... S.D. 3,535 ft. for csg.

Expltn. Co.'s No. 4 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur. ..... S.D. 3,227 ft.

Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2, 460 ft. E NW cor. Sec. 551, Blk. H, W.&N.W. Sur. .. Drlg. 4,150 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. from N line, 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur.. Drlg. 1,500 ft.

Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... Fish. at 2,775 ft.

GRAY COUNTY

Anderson et als' No. 1 Heitholt, C NE SW, Sec. 152, Blk. 3, I.&G.N. Sur. ..... 2,000,000 ft. gas from 2,685-2,800 drlg. 3,092 ft; 15,000,000 ft. gas 2,810-2,940 ft; U.R. 6-in. csg. at 3,100 ft.

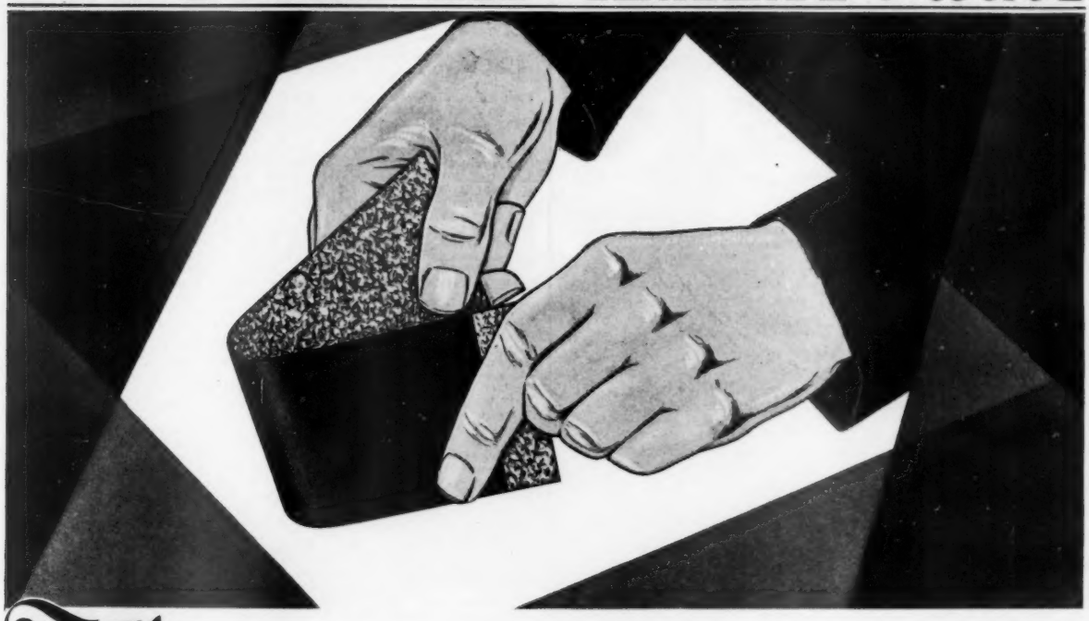
Anderson et als' No. 1 Vallmert, 330 ft. from S, 330 ft. from W, Sec. 140, Blk. 3, I.&G.N. Sur. ..... Location.

Amagray Oil Co.'s No. 2 Chapman, 330 ft. S and W NE cor. W½ SW, Sec. 9, Blk. 26, H.&G.N. Sur. ..... Drlg. 2,600 ft; show gas 2,025-2,-130 ft. and 2,230-50 ft; 30,000,-000 ft. gas 2,315-20 ft.

Barnsdall Oil Corp.'s No. 1 M. B. Davis, NW cor. W½, Sec. 9, Blk. 1, A.C.H.&B. Sur. ..... S.O. 2,820 ft; show gas 2,836 ft. S.O. 2,980 ft; plugged back to 2,883 ft. to shoot; T.D. 2,110 ft., shot 150 qts. from 2,800-60 ft; putting on pump; testing; T.D. 3,010 ft.

British American Oil Co.'s No. 1 Purviance, 330 ft. each way from NW E 160 ac., Sec. 61, Blk. B-2, H.&G.N... Drlg. 2,850 ft; show oil 2,767 ft.

L & S PORTLAND CEMENT *Paint*



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British-American Oil Co.'s No. 2 Purviance, 330 ft. N and E SW cor. E 160 ac., Sec. 61, Blk. B-2, H.&G. N.R.R. Sur. ....Location.
Champlin Ref. Co. and Danciger's No. 1 Cook Faulkner, 330 ft. each way from SW cor. W 120 ac., E 200 ac., Sec. 30, Blk. B-2, H.&G.N. Sur. ....Drlg. 2,615 ft.
Champlin Ref. Co.'s No. 2 Jackson, 330 ft. each way from SE cor., W 100 ac., Sec. 60, Blk. B-2, H.&G.N.. Set 8-in. csg. at 2,720 ft.
Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur. ....S.D. 2,740 ft.
Cockrell-McElroy Oil Co.'s No. 2 McConnell, 330 ft. S and E of NW cor. W½ SW, Sec. 174, Blk. 3, I.&G. N.R.R. Sur. ....C.O. 3,190 ft.
Constantine et als' No. 1 Dial, 330 ft. S and E of NW cor. W½ NW, Sec. 32, Blk. 25, H.&G.N. Sur. ....S.D. 2,965 ft; encountered salt wtr.
Danciger O. & R. Co.'s No. 4 Morse, 330 ft. S and E NW cor. NW SW, Sec. 1, Blk. 26, H.&G.N. Sur. ....Drlg. 1,900 ft.
Danciger O. & R. Co.'s No. 2 Beck, 330 ft. N and E SW cor. NW, Sec. 28, Blk. B-2, H.&G.N. Sur. ....Location.
Danciger O. & R. Co.'s No. 3 Beck, 330 ft. S and 990 ft. E NW, Sec. 28, Blk. B-2, H.&G.N.R.R. Sur. ....Location.
Danciger's No. 2 Shell-Shaw, 330 ft. each way from SE cor. E½ SW, Sec. 5, Blk. 1, A.C.H.&B. Sur. ....Set 8-in. csg. at 2,602 ft.
Danciger et als' No. 1 Sheridan, SE cor. Sec. 184, Blk. B-2, H.&G.N.R.R. Sur. ....Temp. abd.
Delaney and Associates Oil Co.'s No. 8 Jackson, 990 ft. S and 330 ft. E NW cor. E½ SW, Sec. 83, Blk. B-2, H.&G.N.R.R. Sur. ....Drlg. 420 ft.
Empire G. & F. Co.'s No. 1 R. M. Brown, C SE, Sec. 238, Blk. B-2, H.&G.N. Sur. ....C.O. 2,441 ft.
Empire G. & F. Co.'s No. 1 Noel, C SE, Sec. 151, Blk. 3, I.&G.N.R.R. Sur. ....Location.
Sines & Reiger's formerly Eslick et als' No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ....Fish. pipe 3,206 ft.
Gulf Prod. Co.'s No. 1 Jackson, 295 ft. N and 305 ft. E of SW cor. W½, Sec. 62, Blk. B-2, H.&G.N.R.R. Sur. ....Show oil 2,635-40 ft; 2,000,000 ft. gas 2,565 ft; swbng.; 7,000,000 ft. gas.
Independent O. & G. Co.'s No. 1 Hollenbeck, 990 ft. each way from NE cor. NE, Sec. 176, Blk. 3, I.& G.N.R.R. Sur. ....5,000,000 ft. gas from 2,428-83 ft; fish. 2,820 ft.
Lyon et als' No. 1 Morse, 330 ft. N and E SW cor. N½ NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. ....Location.
Magnolia Pet. Co.'s No. 1 Wright, 330 ft. S and W lines S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. ....Location.
McLain Oil Co.'s No. 1 Back, 1,000 ft. from W line and 330 ft. from N line, NW, Sec. 24, Blk. 25, H.&G.N. Sur. ....1,000,000 ft. gas 2,105-10 ft. and estimated 3,000,000 ft. gas 2,202-08 ft; S.D. 2,642 ft; show oil 2,-565-90 ft.
Marland Prod. Co.'s No. 3 Finley-Brown, 1,224 ft. from E line, 330 ft. from N line, Sec. 32, Blk. B-2, H.& G.N. Sur. ....Drlg. 1,660 ft.
Nabob Oil Co.'s No. 2 Morse, 660 ft. from W line and 330 ft. from S line SW, Sec. 67, Blk. 25, H.&G.N. R.R. Sur. ....S.D. 1,970 ft.
Operators Oil Co.'s No. 2 Cook-Faulkner, 903 ft. from S line and 330 ft. from W line of W 90 ac., Sec. 30, Blk. B-2, H.&G.N. Sur. ....Set 8-in. csg. at 2,752 ft.
Operators Oil Co.'s No. 3 Cook-Faulkner, 330 ft. each way from SE cor. W 90 ac., Sec. 30, Blk. B-2, H. &G.N. Sur. ....Drlg. 2,665 ft.
Osborn et als' No. 1 Morse-H, 330 ft. N and E SW cor. S½ NE, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ....Location.
Phillips Pet. Co.'s No. 1 Jackson, 330 ft. each way from NE cor. NE, Sec. 58, Blk. B-2, H.&G.N.R.R. Sur. ....S.D. 2,722 ft; to standardize.
Phillips Pet. Co.'s No. 5 Jackson, 330 ft. S and 990 ft. E NW cor. S½ NE, Sec. 88, Blk. B-2, H.&G.N. Sur. ....Set 10-in. csg. at 1,710 ft.
Phillips Pet. Co.'s No. 2 Palmer, 903 ft. from S line and 330 ft. from E line of E 83.4 ac., Sec. 31, Blk. B-2, H.&G.N. Sur. ....Set. 8-in. csg. at 2,760 ft.
Phillips Pet. Co.'s No. 3 Palmer, 330 ft. each way from SW cor. E 83.1 ac., Sec. 31, Blk. B-2, H.&G.N. Sur. ....Set 8-in. csg. at 2,737 ft.
Phillips Pet. Co.'s No. 4 Palmer, 330 ft. N and W of E 831 ac., Sec. 31, Blk. B-2 ....Drlg. 560 ft.
Prairie O. & G. Co.'s No. 1 Langham, 330 ft. N and E SW, Sec. 1, Blk. B-2, H.&G. N.R.R. Sur. ....Location.
Panhandle Ref. Co.'s No. 1 Saunders, 330 ft. S and E NW cor. E½ NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. ....15,000,000 ft. gas 2,150-2,320 ft; show oil 2,663 ft; T.D. 2,781 ft; shot 150 qts. from 2,630-2,759 ft. and 340 qts. from 2,640-2,759 ft; bailed 2 bailers oil; C.O.
Panhandle Ref. Co.'s No. 2 Saunders, 330 ft. S and W NE cor. E½ NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. ....Drlg. 2,820 ft.
Quillian et als' No. 1 Barrett, 330 ft. from N, 330 ft. from E. Sec. 131, Blk. 3, H.&G.N. Sur. ....Location.
Scott Drlg. Co. et als' No. 1 Chapman, 330 ft. N and E SW cor S½ NE, Sec. 69, Blk. 25, H.&G.N. Sur. ....S.D. 2,070 ft.
Ray Massie's No. 4 Chapman, 330 ft. each way from NW SE SW, Sec. 51, Blk. 25, I.&G.N. Sur. ....Drlg. 2,068 ft.
Shamrock Co.'s No. 1 Clayton-B, 730 ft. from N and 150 ft. from W line E½ of E 277.4 ac., Sec. 50, Blk. 25 ....Drlg. 2,660 ft.
Shell Pet. Corp.'s No. 3 McConnell, 330 ft. N and W SE cor. Sec. 174, Blk. 3, I.&G.N.R.R. Sur. ....Drlg. 1,100 ft.
Sherwood et als' No. 1 Gething, 330 ft. N and W SE cor. N½ NE, Sec. 14, Blk. A-9, H.&G.N. Sur. ....Location.
Skelly Oil Co.'s No. 1 Jackson, 330 ft. from S and W lines E½, Sec. 62, Blk. B-2, H.&G.N.R.R. Sur. ....Rigging up.
Skelly Oil Co.'s No. 2 Jackson, 330 ft. S, 2,990 ft. W of W 160 ac., Sec. 90, Blk. B-2 ....Rig.
Skelly Oil Co.'s No. 3 Jackson, 330 ft. from S and E lines of W 160 ac., Sec. 90, Blk. B-2, H.&G.N.R.R. Sur. ....Rig.
St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. ....Cellar.
St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ....S.D. 3,490 ft. with H.F.W.
St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. ....Spudded and S.D.
Sun Oil Co.'s No. 3 Purviance, 250 ft. from S. 287 ft. from W. Sec. 61, Blk. B-2, H.&G.N.R.R. Sur. ....Location.
The Texas Co.'s No. 6 Bowers, 270 ft. W and 330 ft. N SE cor. E½, Sec. 89, Blk. B-2, H.&G.N.R.R. Sur. ....Show oil 2,780 ft; 1,400 ft. oil in hole 2,807-15 ft; T.D. 2,954 ft; T.P. 2,890-95 ft; C.O.; 150 bbls. per day.
The Texas Corp.'s No. 10 Bowers, 330 ft. from N and E lines of E½, Sec. 89 ....Rigging up.
The Texas Corp.'s No. 11 Bowers, 330 ft. S, 990 ft. E, of E½, Sec. 89 ....Drlg. 450 ft.
The Texas Corp.'s No. 12 Bowers, 330 ft. from N and 330 ft. from W of NE, Sec. 63, Blk. B-2 ....Spudding.
The Texas Corp.'s No. 13 Bowers, 990 ft. from N and 330 ft. from W line E½, Sec. 89, Blk. B-2, H.&G. N.R.R. Sur. ....Drlg. 150 ft.
The Texas Co.'s No. 2 B. Bull, 990 ft. S and E NW, Sec. 2, Blk. B-2, H.&G.N.R.R. Sur. ....Drlg. 2,605 ft.
The Texas Co.'s No. 2 Comb-Worley, 330 ft. N and 2,310 ft. W SE cor. S½, Sec. 36, Blk. 3, I.&G.N. Sur. ....Location.
The Texas Co.'s No. 3 Comb-Worley, 330 ft. N and W SE cor. Sec. 36, Blk. 3, I.&G.N. Sur. ....Location.
The Texas Co.'s No. 4 Comb-Worley, 330 ft. N and 1,-736 ft. W SE cor. Sec. 36, Blk. 3, I.&G.N. Sur. ....Location.
The Texas Corp.'s No. 4 Cook-Faulkner, 1,973 ft. from W line and 330 ft. from N line of W 160 ac., Sec. 29, Blk. B-2, H.&G.N. Sur. ....Drlg. 2,286 ft.
The Texas Corp.'s No. 3 Cook-Faulkner, 1,313 ft. from W line and 330 ft. from N line of W 160 ac., Sec. 29, Blk. B-2, H.&G.N.R.R. Sur. ....Drlg. 905 ft.
The Texas Co.'s No. 5 McLarty-A, 330 ft. S and E of NW cor. Sec. 2, Blk. 1, A.C.H.&B. Sur. ....Show gas 2,235 ft; C.O. 2,795 ft.
The Texas Co.'s No. 2 McLarty-B, at center of J. M. Rose Sur. ....Rig.
The Texas Co.'s No. 2 Shaw, 1,000 ft. from S and 330 ft. from W line E½, Sec. 5, Blk. 1, A.C.H.&B. Sur. ....Drlg. 2,535 ft.
The Texas Co.'s No. 4 Williams, 330 ft. each way from NE NE NW, Sec. 6, Blk. 1, A.C.H.&B. Sur. ....Drlg. 1,410 ft.
Wilcox-Pampa Oil Co.'s No. 7 Comb-Worley, 330 ft. N and E SW cor. SE, Sec. 60, Blk. 3, I.&G.N. Sur. ....Drlg. 2,650 ft.
Wilcox-Pampa Oil Co.'s No. 8 Comb-Worley, 330 ft. NW SE SE, Sec. 60, Blk. 3, I.&G.N. Sur. ....Set 12-in. csg. at 270 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County School lands; elevation 3,363 ft; contract depth 6,000 ft. ....S.D. 1,550 ft.

HARTLEY COUNTY

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk. 21 ....Show oil 3,780 ft; U.R. 6-in. csg. at 4,060 ft; 100,000 ft. wet gas at 3,990 ft.

HUTCHINSON COUNTY

Amarillo Oil Co.'s No. 2 Ingerton-A, 1,650 ft. from N line, 1,071 ft. from E line, Sec. 41, H.&T.C.R.R. Sur. ....Drlg. 1,400 ft; 50,000,000 ft. gas at 1,300 ft.
Holmes et als' No. 2 Quinn, 990 ft. from S line and 330 ft. from E line SW, Sec. 7, Blk. 9, I.&G.N. Sur. ....Drlg. 450 ft.
Huey et als' No. 3 Smith et al, 330 ft. from N and 600 ft. from W of S 40 ac. of E 100 ac., SE, Sec. 12, Blk. Y ....Spudding.
Marland Oil Co.'s No. 2 Reimer, 3,753 ft. S and 450 ft. E of NW cor., Sec. 31, Blk. 47, H.&T.C. ....Cellar.
McMan O. & G. Co.'s No. 2 Sanford, 300 ft. from W line and 315 ft. from S line N 274 ac., Sec. 83, Blk. 46, H.&T.C. Sur. ....Drlg. 1,675 ft.
Midwest Explin. Co.'s No. 2 Moore, 330 ft. from S, 1,320 ft. from W, Sec. 125, Blk. 4, H.&G.N. Sur. ....Location.
Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford-B, Sec. 82, Blk. 46, H.&T.C. Sur. ....S.D. 3,039 ft.
O. B. Penney's No. 2 Johnson Bros., 330 ft. from S line, 330 ft. from W line W½ NE, Sec. 35, Blk. Y, A.&B. Sur. ....Drlg. 960 ft.
Phillips Pet. Co.'s No. 1 Cheatham, 427 ft. N and 330 ft. W SE cor. SE SE, Sec. 38, Blk. Y ....Location.
Phillips Pet. Co.'s No. 1 Johnson Bros., 330 ft. from N and W lines NW, Sec. 34, Blk. Y, A.&B. Sur. ....Drlg. 2,225 ft.
Phillips Pet. Co.'s No. 1 Johnson-Kotz, 350 ft. N and 330 ft. E SW W½ SW, Sec. 35, Blk. Y ....Location.
Phillips Pet. Co.'s No. 4 Johnson, Sec. 28, Blk. Y, A. &B. Sur. ....Drlg. 480 ft.
Phillips' No. 1 Sanford-Glass, 660 ft. S and E of NW cor. S 80 ac. of N 160 ac. of S 320 ac., Sec. 80, Blk. 46, H.&T.C. Sur. ....Set. 8-in. csg. at 2,628 ft.
Phillips Pet. Co.'s No. 6 (Florence), 330 ft. each way from S and W lines, E½ ....Spudding.
Prairie O & G. Co.'s No. 4 Cal Merchant, 5,613 ft. S and 330 ft. E NW, Sec. 37, Blk. 47, H.&T.C.R.R. Sur. ....Location.
Prairie O. & G. Co.'s No. 4 Shaw, 330 ft. S and 990 ft. W NE cor., Sec. 27, Blk. Y ....Bldg. rig.
Skelly Oil Co.'s No. 8 Whittenburg, 330 ft. from S and 2,230 ft. from W, Sec. 22, Jameson Sur. ....Rig.
Skelly Oil Co.'s No. 7 Whittenburg, 330 ft. from S and 1,570 ft. from W lines, Sec. 22, Jameson Sur. ....Drlg. 755 ft.
The Texas Co.'s No. 2 Quinn, 990 ft. N, 330 ft. E SW cor. E½, Sec. 7, Blk. 9, I.&G.N. Sur. ....Location.

KING COUNTY

Huff Oil Co.'s No. 1 Martin, 1,320 ft. from N line and 1,320 ft. from E line, Sec. 171, Blk. F, H.&T.C. Sur. ....Rig.

LAMB COUNTY

Dan Freed et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ....S.D. 1,150 ft; repairs.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ....S.D. 3,128 ft.
Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ....Fish. 4,452 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ....Small show oil 1,133-40 ft; sand; fish. 4,167 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Read-A, C NW, Sec. 14, Blk. 13-12, D.&P. Sur. ....Spudding.
Amarillo Oil Co.'s No. 1 Perkins-A, 330 ft. each way out of NW cor. NE, Sec. 76, Blk. 3 ....Rig.
Amarillo Oil Co.'s No. 2 Warrick, C S 160 ac., Sec. 92, Blk. 46, H.&T.C. Sur. ....60,000,000 ft. gas from 1,580-2,910 ft; fish. 2,910 ft; C.O. 3,020 ft.
Barnsdall Oil Co.'s No. 1 Harrison, 330 ft. from N line and 330 ft. from E line S½ NE, Sec. 5, Blk. M-2 ....Standardizing 2,830 ft.
Dana O. & G. Co.'s No. 1 Anthony, C NW, Sec. 260, Blk. 44, H.&T.C.R.R. Sur. ....Rig.
Dana O. & G. Co.'s No. 1 Road-A, C NW, Sec. 14, Blk. B-12 ....Location.
Fritch O. & G. Co.'s No. 1 Lee Burns, C NE 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ....Spudded and S.D.
Phillips Pet. Co.'s No. 1 Taylor, 330 ft. N and E SW cor. E½ NW cor. Sec. 244, Blk. 3-T T.&N.O. Sur. ....5,000,000 ft. gas from 2,825-2,935 ft; 10,000,000 ft. gas 3,020 ft; 20,000,000 ft. gas 3,040 ft; reset 6-in. csg; T.D. 3,258 ft.
Phillips' No. 1 Wilson, 330 ft. each way out of NW cor. S½ SE, Sec. 157, Blk. 3-T ....Drlg. 1,965 ft.
Skelly Oil Co.'s No. 8 Armstrong & Byrd, 2,920 ft. S and 3,752 ft. of NW cor. Proctor Sur. ....Drlg. 2,360 ft.
Skelly Oil Co.'s No. 9 Armstrong & Byrd, 2,220 ft. S and 990 ft. E NW cor. Proctor Sur. ....Standardizing at 1,432 ft.

MOTLEY COUNTY

Explin. Co.'s No. 5 Matador, C, Sec. 45, Blk. J-B, C. B.&C.N.G.R.R. Sur. ....Spudded and S.D.
Explin. Co.'s No. 6 Matador, 330 ft. from N line and 330 ft. from E line, Sec. 132, Blk. M ....S.D. 529 ft.
Matador Oil Corp.'s No. 1 Owen, C NE, Sec. 10, Blk. G, B.&B. Sur. ....Rig.

RANDALL COUNTY

W. H. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 ....Drlg. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ....S.D. 5,975 ft.

WHEELER COUNTY

Anderson's No. 1 Meiners, C SW SE, Sec. 71, Blk. 17, H.&G.N.R.R. Sur. ....S.D. 1,162 ft.
Angus et als' No. 1 Linkey, C NE NW, Sec. 126, Blk. 23 ....Spudding.
Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ....S.D. 2,920 ft.
Fain et als' No. 2 Binkley & Cain, C SE, Sec. 5, Blk. 24, H.&G.N. Sur. ....Location.
Gillespie et als' No. 1 McMurtrey, C NW SE, Sec. 67, Blk. 17, H.&G.N. Sur. ....S.D. 1,620 ft.
Johnson et als' No. 1 Hicks, C NW SW, Sec. 49, Blk. 17, H.&G.N.R.R. Sur. ....Location.
Johnson & Wisch Kamper's No. 1 West, C NE NW, Sec. 30, Blk. 17, H.&G.N. Sur. ....Location.
Magnolia Pet. Co.'s No. 1 Trostle, C S½ NW SW, Sec. 130, Blk. 23, H.&G.N.R.R. Sur. ....Fish. at 1,810 ft; 1,000,000 ft. gas at 1,795 ft.
Upham Gas Co.'s No. 2 Gooch, 330 ft. from S and E lines N½ SE, Sec. 81, Blk. 23 ....Drlg. 1,355 ft.
Upham Gas Co.'s No. 1 Shelton, C SE NE, Sec. 22, Blk. 24, H.&G.N.R.R. Sur. ....Location.

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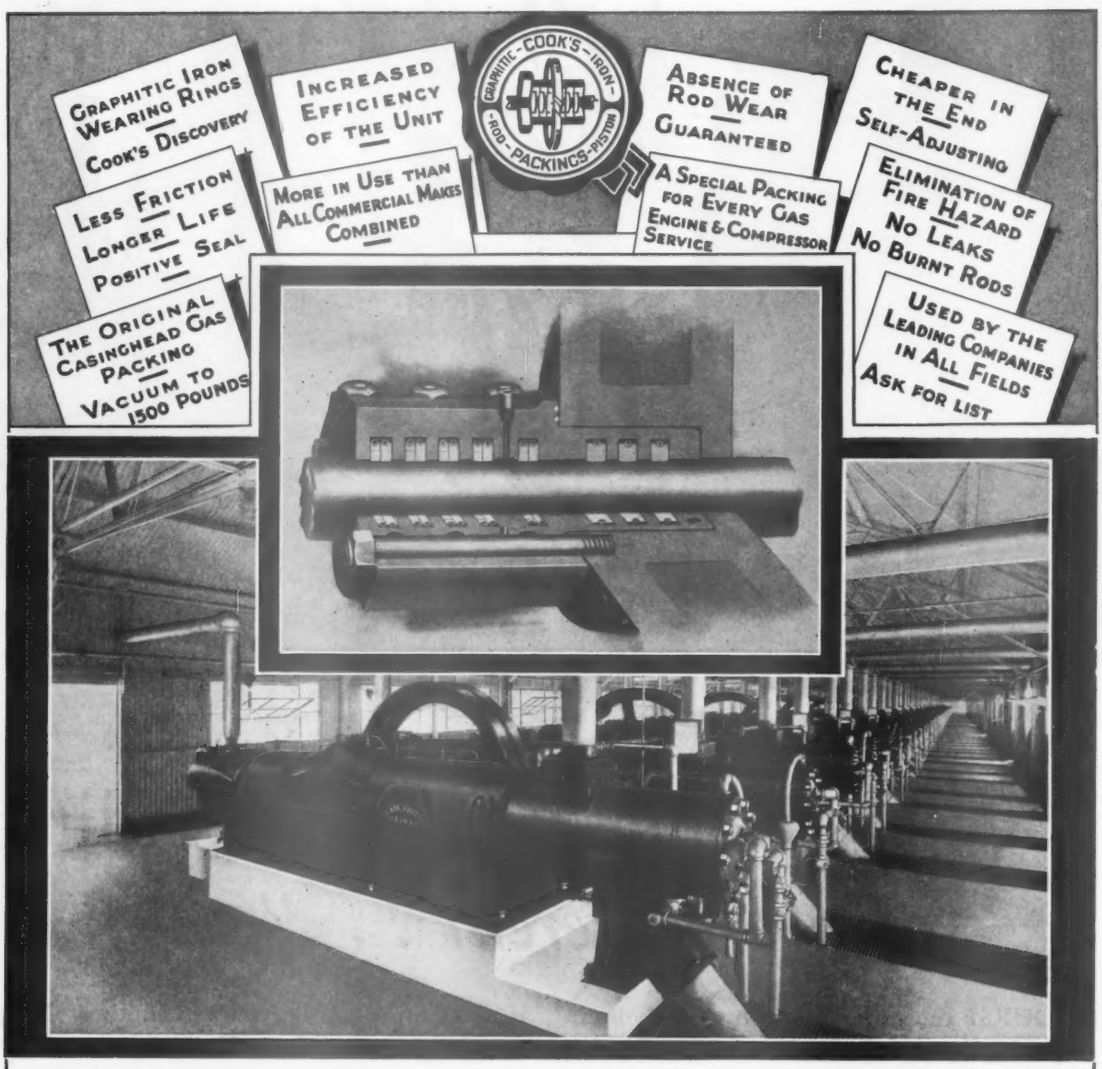

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COOK'S GRAPHITIC IRON ROD PACKING

CENTRAL WEST FIELDS

(Continued from Page 70)

3,614 on the R. O. Galloway, in Westland Township. In Spencer Township, the Ohio Fuel Gas Co. made a remarkably large shallow gas find at No. 1-3,575 on the W. J. Nickle farm, Section 36, at from 273 to 378 feet.

Belmont County

In Belmont County, Colerain Township, C. D. Crouch and others are drilling a second test on the Thomas Starback, Section 7, and Patterson & Peters are drilling on the John A. Vogt farm, Section 31, Somerset Township.

In Morgan County, Penn Township, the Dover Oil & Gas Co. is drilling No. 25 J. L. Stokes, Section 35, and the M. & M. Gas Co.'s No. 5 on the W. B. and L. C. Newton, same section. Choquill and others are starting No. 5 A. M. and J. H. Crew, same section. In Marion Township, the Ohio Fuel Gas Co. made a location for a second test on the F. D. Fitch, Section 24. Kemrow Co. is drilling No. 2 F. & D. Dawson, Section 30, and W. C. McBride, Inc., drilling No. 3 on the Marion Mills, Section 26. In Malta Township, the Ohio Fuel Gas Co. is drilling No. 1-3,604 on the C. H. Pierce, Sections 26 and 27.

The Oko Oil & Gas Co. of Lima, Ohio, drilled in No. 23 on the T. W. Brinker farm, Lot 6, Chatham Township, Medina County, getting a 15-bbl. initial producer at a depth of 346 feet. In the same area, the East Ohio Gas Co.'s No. 4 J. and A. Jalensics, Lot 2, same township, produced an initial of 25 bbls. at 333 feet.

Hulse & Kuntz drilled in No. 9 on the Joseph Chaney, Section 1, Perry Township, Licking County, and found a well good for about 3 bbls., the oil pay being found from 2,844 to 2,885 feet, total depth 2,925 feet. Pure Oil Co.'s No. 3 Henry Loughman, Section 1, Hopewell Township, is reported at 40 bbls. initial.

KENTUCKY-TENNESSEE

(Continued from Page 84)

Carpenter and others or the Three C's Oil Co. brought in a very nice producer in No. 5 on the Mitchell-Birkhead farm, near Bell's Run, reported at 75 bbls. at 725 feet.

Brenner & Adams drilled a dry hole on the Bellamy farm, in the Deanfield area of Ohio County.

D. J. White and others' second test on the W. L. Mills 80 acres southwest of Collier, found its pay from 420 to 470 feet, and produced 65 bbls. initial.

J. M. Meredith's No. 10 Kelley heirs in the Deanfield area, produced 25 bbls. the first 24 hours. In this well a string of 398 feet of casing was set, oil pay at from 401 to 431 feet, total depth 425 feet.

In the Deanfield area, the National Deposit Bank Co.'s No. 7 on the M. J. Brown 50 acres, produced an initial of 40 bbls., the oil being found at from 402 to 440 feet, total depth 450 feet.

James C. Ellis' Nos. 14 and 15 on the Gossett lease, eastern part of the Ambrose-Weller Pool, reported at 30 and 35 bbls., respectively.

H. B. Cameron and others' No. 6 Gil Farmer in the Adaburg area, reported good for 20 bbls. In this well a string of 435 feet of casing was set, the oil pay found at from 438 to 441 feet, total depth 450 feet.

The Pampas Oil & Gas Co. and E. L. Newton made a remarkable find in a test drilled near Deanfield, farm not known, which produced according to advices 2,000,000 feet of gas, the largest gas well found in the county for a long time.

Daviess County Wells

The Jetsan Oil Co. and others made two nice strikes on the South Hinton lease in the Jones Pool of Daviess County, southwest of Whitesville. No. 3 is credited with 75 bbls. the first 24 hours and No. 4 at 70 bbls.

Cumberland Petroleum Co.'s No. 3 on the Hayden heirs 35 acres in the Burton Pool is reported at 25 bbls.

Huff & Calderwood drilled in their first duster on the Widow Salmon farm in the Salmon Pool, when No. 7 came in that class, the other six wells all being good producers.

Ray E. Young drilled a duster on the George W. Wilson farm, about 2 miles southwest of Owensboro, at 1,725 feet.

The S. N. Herreld Syndicate struck a dry hole on the N. J. Cook farm, west of the Jones Pool and between that and the Burton Pool.

Pratt and others found a duster at No. 2 on the M. G. Huff 119 acres in the Roby Pool, southwest of Pellville.

Creek Drilling Co. abandoned No. 1 J. E. Brown farm and No. 1 on the Tompkins farm, in the Utica Field in southern part of county.

Other Completions

In the Gasgow Field of Barren County, J. H. Mann and others drilled a dry hole in the Good Night area, farm name unknown at 800 feet. This well required a string of 400 feet of casing. Hunt-Leach Oil Co. also found a dry one on the Samson farm, in Coral Hill Pool. A string of 300 feet of casing was set and the well was drilled in at 450 feet.

E. D. Defenbaugh's No. 4 L. Beam farm, in the Gainesville area of Allen County, was dry at 330 feet.

In Cumberland County, Smith and Smith drilled a duster on the Lela Keen farm, in the Bear Creek area of the county.

Field Pickups

McClintock & Reed are drilling a deep test on the R. E. Carmon farm, about 3 miles west of Cloverport, in Breckenridge County. At last report the test had reached a depth of 1,075 feet. Wilcox-Cory Oil Co. is drilling on the Melton farm, in the William Prong of Cumberland County, and Allen and others are drilling on an unknown farm, in the Sulphur Creek Field, same county.

In Hancock County, McMahan & Combs are about due in with No. 5 test on the 3,000-acre block of the Hancock County Development Co. Jack & Daniels are drilling near Dukes, in the same county, near the Breckenridge County line.

In Ohio County, the Cumberland Petroleum Co. is drilling No. 19 on the Bob Hamilton 176 acres, in the Ambrose-Weller Pool.

Henry Vickers purchased from Miller & Dameron, a lease on the Evans farm, near Whitesville, in Daviess County, upon which there are four producers, one of the early leases developed, for a consideration of $2,500. No. 5 is now under way by the new owner.

The Buckner-Larue Oil Co. has installed a power plant on its Trodgen-Knight lease in the Hayden Pool, in Daviess County, capable of handling 20 wells.

The Jetsan Oil Co. and Foster Petroleum Co. are installing engine and power on the south Hinton farm, in Daviess County.

W. E. Hupp, of Lexington, and the Pampas Oil & Gas Co. are starting a well on the Arthur Davis farm, northwest of Taffy in the Bartlett Pool.

Pampas Oil Co. is striking a well on the May farm, in the Red Hill section of Daviess County.

Bartlett Pool

The Bartlett Pool, in Ohio County, Kentucky, and just west and south of Taffy, is the most productive area in Kentucky at this time, owing to the large wells found at very shallow depths and the wells are holding up much better than in many sections of the western portion of the State. Late advice from the Taffy area is that the Hupp, Duff and others' No. 7 on the L. Trodgen lease produced an initial of 200 bbls., and No. 8, same farm, produced 160 bbls. initial. C. E. Daugherty and others, on a part of the same Trodgen farm, got two large producers, as No. 3 showed 300 bbls. initial and No. 4 produced 400 bbls. initial, the pool running more oil than some of the larger pools in Ohio and Daviess Counties. The latter well pumped all the oil on the beam it could and then flowed at the rate of 100 bbls. besides, making it one of the outstanding wells of the pool, although the Ohio Oil Co.'s big well on the Kirk farm, produced 500 bbls. in 24 hours. These wells are taxing the pipe line to handle the oil.

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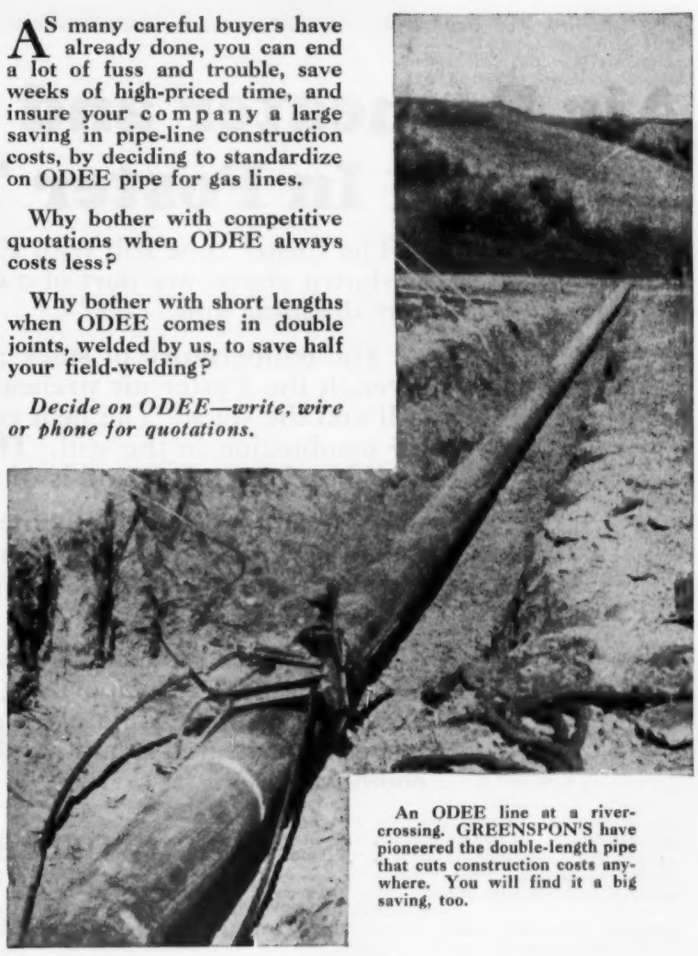

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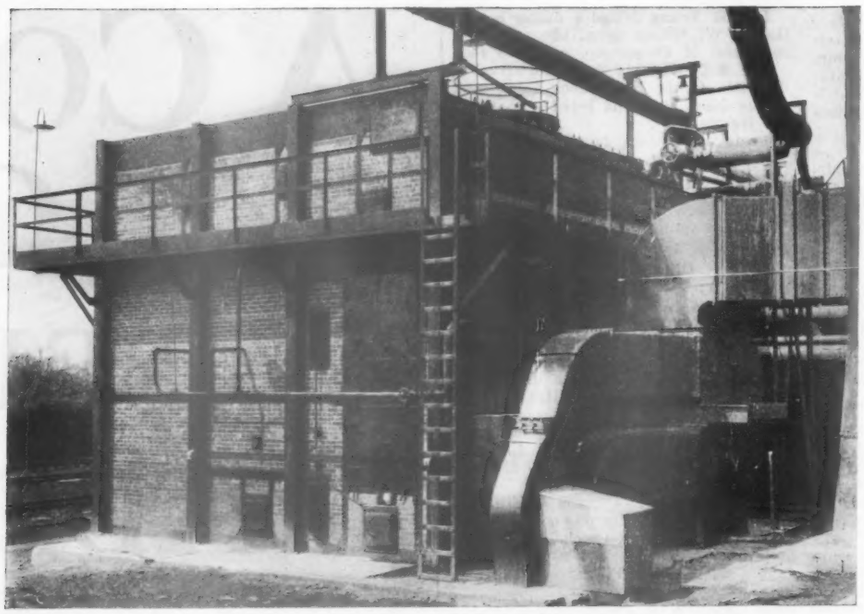

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The temperature of stack gases is reduced by passing them through the Foster air preheater which is located between the still and the stack. The heat recovered preheats the air used for combustion in the still. This air heater contains 3,150 sq. ft. of heating surface and is of the sectional plate type.

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FOSTER WHEELER

EASTERN FIELDS

(Continued from Page 84)

Geary district, Roane County, the United Fuel Gas Co. is drilling and starting 12 wells. In Smithfield district, D. W. Law and others have rig material on the Riddle & Co. farm. In Reedy district, the Heck Oil Co. has drilled its test on the W. H. Enoch farm to a depth of 2,500 feet and shut down. In Ravenwood district, Jackson County, the same company has started to drill a second test on the B. A. Shaffer farm.

In Sherman district, Calhoun County, Godfrey L. Cabot is drilling and made locations for seven wells. In the same district, C. B. Davis & Co. have shut down for water on the Eva Hathaway farm. In Lee district, F. F. McIntosh is rigging up on the D. W. Price farm. In DeKalb district, Gilmer County, C. B. Lewis & Co. are starting to drill on the A. J. Kelly farm. In Troy district, the Mud Lick Oil Co. has a gasser in the Big Injun sand on the Clinton Burton farm.

In New Milton district, Doddridge County, Trainer & Travis have made a location on the Robert Nicholson farm. In Coal district, Harrison County, the Washington Gas Co. is due in the sand on the E. D. Fitro farm. In Church district, Wetzel County, the Carnegie Gas Co. has started to drill on the Sarah Shea farm. In Freemans Creek district, Lewis County, the Pittsburgh & West Virginia Gas Co. is rigging up on the J. C. Teter farm. In New Milton district, Doddridge County, J. E. Trainer has rig material on the Sutton heirs' farm.

Lincoln County

In Carroll district, Lincoln County, the United Fuel Gas Co. is rigging up on the Wiley-Thompson farm. In Jefferson district, the same company is rigging up on the Della Mullens farm. In Scott district, Boone County, the Hope Natural Gas Co. has started to drill on the J. D. Allen farm. In Burning Springs district, Wirt County, Wagner & Co. have rig timbers and tools on the William Living farm. In Walker district, Wood County, the Penn Royal Oil Co. has rig up on the Rebecca Montgomery farm.

On Bull Fork of Tanners Creek, DeKalb district, Gilmer County, the Hope Natural Gas Co. has a rig up on the O. W. O. Hardman farm. This is 2 miles in advance of production. In Murphy district, Ritchie County, Haught & Co. are starting to drill on the Church lot. In Grant district, Edwin J. Lynch is rigging up on the Carnelia Storrs farm. In the same district, Swingle & Ingram have started to drill on the George Morris farm. In the same district, the New York Petroleum Co. is rigging up on the Alice Cokely farm. In the same locality, A. C. Woodford has rig material on the N. L. Layfield farm.

SOUTHWEST PENNSYLVANIA

In Morris Township, Greene County, the Consumers Fuel Co. has shot No. 3 on the James S. Rutan farm, increasing its production from 5 to 45 bbls. the ensuing 24 hours.

In Richhill Township, Greene County, the Carnegie Natural Gas Co. drilled deeper No. 3 on the J. J. Cooper heirs' farm. It is a gasser in the Gordon sand. In Aleppo Township, the Manufacturers Light & Heat Co.'s test on the A. and S. E. Rutan farm is a gasser in the same formation.

CANADIAN FIELDS

(Continued from Page 66)

work shortly in Section 35-19-3w5, on the Black Diamond structure in the northwest end of the field.

Spooner Oils' No. 2, Section 24-20-3w5, has resumed drilling 293 feet in the lime at 5,373 feet, after setting diamond bit. The well has considerable wet gas, with potential crude naphtha recovery of 75 to 100 bbls. It is planned to continue drilling till a big production horizon is reached. Spooner's No. 3 has been tentatively located in Section 24-20-3w5. Shareholders of Spooner Oils, Ltd. at their annual meeting recently re-elected the old directors, A. G. Spooner, George A. Barber, H. R. Spooner, Albert Mutz, Robert Wilkinson and C. E. Snyder, and added R. A. Brown and H. Morgan to the board. Spooner's No. 1 has been in steady production since October 1, 1928, making between 45 and 50 bbls. a day.

In the south end of the field, Commonwealth Petroleums' No. 2, LSD 7, Section 9-19-2w5, is reported spudding in. Hylo Oils' No. 1, LSD 12, Section 4-19-2w5, has derrick up and will spud in July 1. Alberta Pacific Consolidated's No. 1, LSD 5, Section 20-19-2w5, has spudded in, and is reported starting work on No. 2, same LSD, to spud in July 15. Noble-Olsen Drilling Co. of Tulsa has contract.

Mercury Oils' No. 2, LSD 12, Section 4-19-2w5, is reported rigging up. Mid-Royal Oils' No. 1, LSD 4, Section 31-19-2w5, has derrick up and is installing machinery. Homestead Oils' No. 1, LSD 5, Section 16-19-2w5, has spudded in, with Bill Maughan handling the drilling. Sunlight Oils' No. 1, LSD 2, Section 4-19-2w5, is reported rigging up. Structure Oil & Gas' No. 1, LSD 7, Section 31-19-2w5, is reported rigged up ready to spud. Structure's No. 2, LSD 6, Section 12-20-3w5, in the central section, has started work on derrick.

Calmont Oils' No. 4, LSD 11, Section 20-19-2w5, has spudded in. Calmont's No. 6, same LSD, is rigged up ready to spud. In the central section, Calmont's No. 3, LSD 2, Section 1-20-3w5, is erecting steel derrick.

Freehold Oil Corp.'s No. 1, SW Section 3-21-3w5, is reported drilling below 2,600 feet, after getting 2,000,000 feet of gas. Angus Oils' No. 1, LSD 5, Section 3-21-4w5, is reported spudding in. Invaders Petroleums' No. 1, LSD 10, Section 3-21-3w5, has camp up and is working on derrick for a cable tool test, to spud in before August 15. Dalfin Petroleums' No. 1 has been located in LSD 5, Section 34-20-3w5, on the west fold of the north end of the Turner Valley structure, and will spud in by July 15. Vimy Oils' No. 1, LSD 7, Section 24-20-3w5, is reported spudding in.

In the south end of the field, Lowery Petroleums' No. 1, SW Section 17-19-2w5, has derrick up and is installing machinery.

Rapid Progress Made

In contrast with the difficult conditions in the early days of the Turner Valley Field, rapid progress is being made by many of the newer outfits. Foothills Oil & Gas Co.'s No. 3 (Southwest Petroleum) has taken only a few months to carry to the limestone. Foothills' No. 4, in the north end of the field, made the first 2,000 feet of hole in 26 days. Though it is hard to get definite figures, some 1,400 men are probably employed in the field, with a pay roll running over $275,000 a month. On the basis of the May production of more than 88,000 bbls., the field is definitely good for 1,000,000 bbls. a year, none of this production testing below 60 gravity and most of it running over 70. The June production will likely exceed 100,000 bbls., and with several tests in or near the lime, the next few months should show a still more marked increase. Available roads leading into the valley are crowded day and night with cars and trucks bringing in materials and equipment. Earlier in the season, these roads were impassable, but they are now in fairly good shape; and the government highway from Okotoks to Turner Valley is expected to be finished in a few weeks' time.

The regulation enabling the Dominion government to collect royalties on oil produced on Dominion crown lands leased to private companies will, it is officially announced, be put into effect on January 1 1930. The regulation provides that after a company has been producing oil for five years, a royalty not less than 2½ per cent nor more than 5 per cent of the output, at the discretion of the minister of the interior, shall be collected. Some of the earlier producing wells in the Turner Valley are nearing the expiration of the five-year limit, which was provided as an encouragement to oil operators.

Calgary & Edmonton Corp., Ltd. which is largely interested in Turner Valley and southern Alberta oil acreage, held its annual meeting at Winnipeg recently when the following officers were elected: President, H. F. Osler, Winnipeg; directors, B. Hewitt, A. H. Douglas, Vancouver; D. C. Coleman, Winnipeg; F. G. Osler, Toronto; P. Burns, Calgary; George Crinnell Milne, F. Roche and Ernest Chaplin, London, England. L. D. M. Baxter was named field manager with headquarters at Calgary. The company holds oil rights on 1,150,000 acres north and south of Calgary. Four subsidiaries to be organized are concerned with royalty interests on leases held by the Mayland, Advance, Sterling Pacific and Lowery companies in the south end of the Turner Valley. The company's holdings were acquired in connection with a land grant many years ago to McKenzie & Mann when they built the Calgary & Edmonton Railroad.

Foothills Belt

In the foothills belt, considerable activity is in progress. The most promising test is probably Imperial Oil's No. 1 Highwood, LSD 3, Section 36-18-3w5, in the Highwood area which is drilling some 21 feet in the lime at 4,248 feet. Location is being made on the Highwood structure for a joint test by the Nordon Corp. and Carruthers, Martin & Torrance of Winnipeg, represented in Calgary by A. F. Mewburn.

In the Morley Reserve area, Wabash Oils' No. 1 is drilling 770 feet in the lime at 2,255 feet depth with a steady gas flow and occasional spurts of light oil. Norcon Oils' No. 1 is drilling below 605 feet with a little gas.

In the Aldersyde district, south of Calgary, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, struck a fair gas flow at 3,500 feet and has resumed after running 6-inch casing to 3,485 feet. The drill is in the lower Fernie shales. In the same area, Meteor Petroleum & Royalty Co., recently incorporated with offices at Wayne, Alberta, has secured considerable acreage from the Apex Oil & Gas Syndicate and is arranging for development. Directors of the Meteor company are L. J. Hart, H. C. Tupper, W. J. McNeil, Harry Grover and Harry Atkins, all of Wayne.

In the Morley Reserve area, Model Oils' No. 2, less than a mile northwest of Wabash Oils' No. 1, has camp built and is working on derrick. Kamorley Oils' No. 1 is rigged up ready to spud in.

Skiff Field

In the Skiff Field, southern Alberta, there is considerable difference of opinion as to the exact status of Imperial-Devenish's No. 3, LSD 11, Section 11-5-14w4. It is understood a capacity test of the well is to be made shortly under the direction of officials of the department of the interior. An official statement of Imperial Oil, Ltd., follows:

"It was officially announced from the Imperial Oil producing department that the Imperial Oil Co. has decided not to drill further wells in the Skiff area. Devenish's No. 2 well had no production, and Devenish's No. 3 on the pump test made only 30 bbls. a day, which, for this class of oil does not make a commercial producer."

The well, according to latest reports, is full of oil and flowing a little, possibly 5 bbls. a day. There seems to be considerable gas, and no water. The production comes apparently from the Ellis-Madison contact at 3,088 feet, and is a black crude about 21 gravity.

In the same field, Dauntless Oils' No. 1, LSD 9, Section 36-6-15w4, is to spud in about July 1. This company was organized and largely financed by the Denenish interests and will test a part of the structure some distance from the Devenish's Nos. 1 and 3 wells. Lion's Gate Oil Co.'s No. 1, Section 33-6-15w4, has derrick under construction. Treasure Oils' No. 1, LSD 16, Section 14-6-15w4, will start work in July.

On the Beaver Dome, Madison Oil's No. 2, LSD 10, Section 24-2-11w4, is drilling around 1,420 feet, after striking a considerable gas flow at 1,263 feet.

In the Milk River district, Commonwealth Petroleums, which has been core drilling its acreage on the Blood Reserve near Lethbridge, will next month start a deep test. In Capitol Oil & Gas Co.'s No. 2, LSD 4, Section 4-2-12w4, in the Milk River area, some gas was struck at 962 feet.

On the Montana side, Monalta Oil Co.'s No. 2, west of Sweetgrass, is drilling below 1,050 feet with some gas. In the Sweetgrass Hills, Sunburst-Bear's No. 1 Den-Watford is drilling in a hard cap rock below 2,300 feet close to the Sunburst sand after encountering continuous small shows of oil and gas.

West of Coutts, Hol-Gar Petroleum Co.'s No. 1, LSD 1, Section 11-1-17w4, on the Dawson-Dowling structure, is unloading material for a test of Alberta Pacific Consolidated's acreage, to spud in early next month. George Muir is field superintendent and Charles J. Freeman has the drilling contract. Alberta Pacific Consolidated's No. 1 Red Coulee is reported rigging up in Section 4-1-16w4.

Blood Reserve Area

In the Blood Reserve area, Lethbridge Petroleum & Refineries, Ltd., has secured 2,000 acres 5 miles southwest of Lethbridge adjacent to the Commonwealth Petroleums holdings. The officers are: President, Italo Rader, Lethbridge; vice president, S. H. Adams, Calgary; secretary-treasurer, L. M. Jones, Calgary; directors, H. R. Chauncey and Joe Deman, Calgary; M. Freeman, Lethbridge; P. A. Magrath, Cranbrook, British Columbia. The company is carrying on a structure test to determine location for a commercial test to be drilled with cable tools.

Milk River Oils, Ltd., is arranging to put down a test on the Beaver Dome, where it holds 1,271 acres. F. L. Major, managing director, is arranging contract for Milk River's No. 1 test.

In the Pincher Creek area, Alberta Gas & Fuel Co. is continuing structure tests on its acreage.

In the Cypress Hills area, southeastern Alberta, arrangements are being made to start Eagle Butte's No. 2. Cyhill Exploration Co. of Toronto is arranging to drill two tests on another portion of the same structure.

In the Suffield district, Township 17-8w4, Ontario-Alberta Development Co.'s No. 1 is drilling below 2,400 feet with sufficient gas under 300 pounds pressure to fire the boilers. The lime is looked for at 3,300 feet. In Champion district, Hudson's Bay-Marland Oil Co.'s No. 1, Section 9-16-23w4, is drilling at 1,200 feet with a strong flow of gas. Hudson's Bay-Marland's No. 2, Section 23-17-18w4, in the Bassano district, has been contracted for.

Acadia Valley

In the Acadia Valley, Fuego Oil Co.'s No. 1, Section 34-25-4w4, near Oyen, Alberta, has resumed drilling at 2,860 feet after cleaning out and running 6-inch casing to the bottom. It was started some years ago, but has not drilled since 1926, when a gas flow, estimated 3,000,000 feet, was met around 2,600 feet. Log shows small gas shows at 820 feet, 950 feet and 1,530 feet, and shows of oil at 2,232 feet and 2,600 feet. Officers are: President, H. E. Law, Toronto; secretary-treasurer, Robert Campbell, Oyen; directors, Mrs. Margaret McGregor, Oyen; George Wilcocks, Toronto; Miss Agnes McPhail, Ceylon, Ontario, and Dr. Harold Miner, Milwaukee.

On the Ribstone-Blackfoot structure, eastern Alberta, Meridian Oils' No. 1, LSD 1, Section 16-45-1w4, which got heavy crude production at 1,872 feet, has been given a pumping test. The well is unofficially reported to have made 411 bbls. flush production, but is now pumping around 100 bbls. a day, with oil standing 750 feet in the hole.

Wainwright Field

In the Wainwright Field, East Central Alberta, Wainwell Oils' No. 4, LSD 15, Section 36-44-7w4, has been drilled in. It is unofficially reported between 320 and 400 bbls. a day, with possibly enough gas production to flow the oil when the well is tubed. Annual meeting of Wainwell Oils, Ltd., was held at Toronto, when the directors were re-elected with J. Harry Dodgson as president and P.

D. Bowlen, vice president and managing director.

British-Wainwright Oils' No. 1, LSD 13, Section 22-45-6w4, is reported drilling into the sand. Anwood-Dome's No. 1, LSD 7, Section 31-45-6w4, is making a water shutoff at 2,300 feet which may make the well a commercial producer. Anwood-Dome's No. 2, LSD 5, Section 18-44-6w4, has derrick up for a rotary test. Wainwright-West's No. 1, LSD 1, Section 1-45-7w4, has derrick up. Emerald Oils, Ltd., of Edmonton is reported to have arranged with the J. W. Elliott Drilling Co. to deepen Emerald's No. 1, offsetting British Petroleums' No. 3, and drill two new tests this summer. Emerald's No. 1, drilled some years ago, proved dry in the first sand.

In the Viking Field, Hudson's Bay-Marland's No. 2 has finished a gasser in the Viking sand good for 8,300,000 feet. It is being connected with the Northwestern Utilities' system to supply Edmonton. The drilling outfit has been moved to a new location for a test by Northwestern Utilities, Ltd., which will drill two wells.

In the Birch Lake district, East Central Alberta, a Duluth syndicate holding practically all the acreage in Township 48-10w4, is planning to drill two tests, one a deep hole, this season.

In the Clearwater district, northern Alberta, Waterways Oils, Ltd., is reported letting contract for a test on a 4,200-acre block, and Aurora Oil Co. is also reported arranging to drill.

Survey Work

Considerable survey work is being done by outside interests in Alberta. Canadian Exploration Co. of Denver, headed by A. E. Humphreys, has one crew in the field and two more enroute, with headquarters at Lethbridge; and has leased some 17,000 acres for development. A subsidiary, the Frontier Development Co., has a test drilling at 700 feet in the Wildcat Hills near Cochrane. Early development is planned on the Duvernay structure near St. Paul de Metis, northeast of Edmonton. Some 90 townships have been covered by the geologists in the past three years, and eight additional structures were mapped. Three are in the border area near Lethbridge. Fisher & Lowrie of Denver are consulting geologists for the company. Officers are: President, A. E. Humphreys, Denver; vice presidents, C. A. Fisher, Denver; S. J. Sackett, Chicago; secretary, Harold D. Roberts, Denver; treasurer, Judson S. Hubband, Denver; assistant secretary, Harold W. Lowrie, Jr., Denver; director, John I. McFarland, Calgary.

A Winnipeg syndicate, headed by W. S. Newton and G. J. Thacker, is acquiring holdings in the border area and, if core drilling gives encouraging indications, will undertake commercial development. Dr. T. B. Williams of Calgary is geologizing the area, and core drilling will start about July 15, to be followed by a commercial test this season. Joseph H. Sinclair of New York, formerly of the United States Geological Survey, is looking over the Alberta fields for New York interests.

CALIFORNIA FIELDS

(Continued from Page 65)

work has also been started for a new absorption plant to be located on property under development by the Marland Oil Co. and this installation is scheduled for completion within 60 days. It is evident from the foregoing construction work that Kettleman Hills' operators anticipate the development of substantial production and are making the necessary preparations beforehand.

Long Beach

Drilling operations in the Long Beach Field resulted in the completion of several wells in the last week and a check of development work under way indicates the probable completion of several more during the next few weeks. The Cal-Mex Oil & Refining Co. started off the week by recompleting No. 22 Marine doing 749 bbls. of clean 25.9 gravity oil and 1,100,000 feet of wet gas daily from 5,336 feet, the hole having been finished with a 3-inch perforated liner. The Union Oil Co. also chalked up a fairly good producer when No. 1 Temple was brought in flowing 741 bbls. of clean 26.1 gravity oil daily from 7,119 feet. This new well, which is flowing under a casing pressure of 770 pounds, is located on acreage subleased from the U. S. Royalties Co.

There is still a large amount of development work under way in the Long Beach Field and this drilling should result in the completion of several good wells during the next 30 days as there are about 15 wells rotating ahead in the oil sand. No. 11 Nesa, the Shell's deep test in this field, was down 8,689 feet and while several thin layers of oil sand have been logged below the deepest producing horizon at 7,500 feet showings below this point have not been sufficient to warrant the expectation of getting commercial production. This well, which is located in the proven area of the Long Beach Field, will be carried down to 10,000 feet unless mechanical difficulty prevents the attainment of this objective. In the Coyote Hills Field of Los Angeles Basin the Standard finished No. 44 Emery, a new well doing 125 bbls. daily from 4,100 feet. The output, however, is still cutting rather heavily and may require correctional work.

Ventura Avenue

Two wells were put on production in the Ventura Avenue Field in the last week, although neither registered substantial production. The Associated started off the week by finishing No. 17 Hartman, a new well located in the northern part of the field which showed an initial daily production of 660 bbls. of 30.1 gravity oil and 1,600,000 feet of wet gas daily from 7,071 feet. No. 2 Taylor of the Shell, which was also put on production, was recompleted after being redrilled and deepened to 7,150 feet, from which depth it showed an initial of 340 bbls. daily.

Daily production of the Ventura Avenue Field in the past several weeks has shown a consistent increase in spite of the fact that only a limited number of wells have been completed. The increase shown is due to a readjustment in curtailed production as wells in this field have been pinched back for more than a year in order to conserve natural gas and prevent waste. A check of development work under way in this field indicates the probable completion of about 10 wells during the coming month as the Shell, Associated and Pacific Western all have one or more projects rotating ahead in the pay.

Midway-Sunset

The North American Consolidated's No. 1 Sunset Extension in Section 8-11-23, blew in prematurely a few days ago flowing at the rate of 1,200 bbls. per day from the Maricopa brown shale at 2,890 feet, but the well sanded up within a short time and the crew succeeded in re-entering the hole and work has been resumed. A string of 11¾-inch had been landed in No. 1 Sunset Extension at 2,718 feet and it is probable therefore that this new well will be listed for early completion. The North American's No. 1 Bronco, north of No. 1 Sunset Extension, is also showing evidence of production and should be finished in the near future as the bit in this hole is rotating ahead in the brown shale at 2,855 feet.

The Signal Oil & Gas Co., which is primarily responsible for this localized development work out in the Maricopa Flats area of the Midway-Sunset Field, has set a string of 8¼-inch in No. 3 Sheehan, which has been bottomed at 3,110 feet preliminary to an early production test. No. 4 Sheehan is not yet deep enough to pick up the pay but should do so in the near future as this well recently passed the 2,740-foot level. One new well was put on production in the Midway-Sunset Field in the last week, the Standard Oil Co. successfully completing No. 224 in Section 1-32-23 as a 145-bbl. pumper from 2,656 feet.

Drilling operations in the West Front area of the Kern River Field showed practically no change as only a small amount of drilling is under way. The Chanslor-Canfield Midway Oil Co. finished No. 25 in Section 23-28-27 a few days ago and this new well is pumping 140 bbls. of 16.1 gravity oil daily from 2,208 feet. Although pipe line facilities out of the Mount Poso Field of Kern County are totally inadequate to handle present potential production operators are still engaged in additional development work. Most of this new drilling, however, is of a compulsory nature due to lease obligations and in many cases these wells will be shut in upon completion.

There are nine strings of tools in operation in this field with new rigs going up for several more. The Shell has just recemented No. 1 Knapp in Section 28-26-28 for the sixth time at 1,463 feet and it is thought the next test will show a tight job. The Petroleum Securities is making a water test on No. 15 Glide at the present time and this new well in Section 21-27-28 should be completed and shut in within the next 10 days. Practically all development work has been suspended in the Round Mountain Field of Kern County as there are only two strings of tools in operation at present.

SOUTHWEST WILDCATS

(Continued from Page 59)

of Brooks County and Amos Dinn's No. 2 Garcia is a little north of French. French is now drilling his fourth formation test having completed three, on a big structure that looks like it ought to be good. There will be eight or ten formation tests before a location is decided upon for two deep tests. The southeast corner of Jim Hogg County and the southwest corner of Brooks County come together on the north line of Starr County and just a few miles to the north of the French and Dinn operations. W. W. Jones of Corpus Christi brought in a 12,000,000-foot gas well a few years ago at about 1,200 feet while drilling for water for his ranch.

Houston Oil Co.'s No. 1 Lassiter, the only other wildcat in Brooks County, is in the northeast corner of the county on what is supposed to be a salt dome.

Taking Leases

There is rather an unusual amount of activity all through southwest Texas in the matter of taking big lease blocks. The Texas Company is moving in material in northwestern Maverick County for a purely wildcat test 5 miles west of Darling Switch and 22 miles north of Eagle Pass. The company has a big block there. There was quite a stampede into that part of Maverick County a couple of years ago on discovery of what looked like a big structure extending for 40 or 50 miles northwest and southeast. The Texas Company has recently taken a block of some 4,000 acres on the Swearingen land a few miles on east of the east end of the Somerset Field and extending south from the Medina River. E. G. Potter is down 1,400 feet with a showing of oil in the No. 1 Watson, one half mile east of the block.

Among others who are starting extensive wildcat programs is the Grayburg Oil Co., which is starting one test near Sugarland in the Houston territory and has several other blocks in the San Antonio territory that are being core drilled or gone over with geophysical instruments or are in some other stage of preparation for starting a test.

Along the county line between Caldwell and Gonzales and between Bastrop and Fayette and extending up to Giddings in southern Lee County there is a sector that is very interesting. Joe Bruner has a test with casing set and a rumor that he has an oil showing and Fort Bend Oil Co., several miles west of him, has had a showing of oil in a core. This is around Waelder in northern Gonzales County. Between Dilworth, which is a little south of Waelder in Gonzales, and Flatonia, east of that in Fayette County, one of the major companies is blocking acreage and near Flatonia W. J. Kelly is down 280 feet in No. 1 Burke and in rock. Merritt of Dalles is interested in a block between LaGrange in Fayette and Upton in Bastrop County. About 5,000 acres has been leased in Bastrop extending from the old Cardinal Oil Co.'s No. 1 Ott northeast toward Smithville and R. R. Rundus has gone back in his No. 1 Fee just south of Smithville at 750 feet and is resuming drilling. It had been shut down for many months. E. Lee Moore, who is drilling near Muldoon in Fayette County, has a block in the southwest corner of the Andrew Graham league in the same general area in Bastrop and expects to drill on it.

From Jeddo in the southern point of Bastrop County, running east to Cistern in Fayette County, Kinney of Dallas has a block of 7,000 acres and will start a 4,000-foot hole.

Down on the Lamar peninsula and also on the Live Oak Peninsula, both near Rockport on the coast, there have been some big blocks leased. An independent concern has leased the Lamar Peninsula subject to titles.

Goliad County, which for years has not had much attention paid to it, is about one-fourth leased up. The Humble Oil & Refining Co. has the biggest block laying just north of the city of Goliad. Its block is over 18 miles long, extending from the Coleto Creek which is the eastern boundary of the county to a point 4 miles west of the city of Goliad, and the city is nearly in the center of the county. There are some scattered small tracts in the block that the Humble does not have but not very many and not much acreage. The Shell Petroleum Corp. and The Texas Company have some pretty good sized blocks in the county but nothing to compare with the Humble.

Bee County, laying west of Goliad, is also pretty well leased up.

In Fayette County, the Shell Petroleum Corp. used geophysical instruments along both sides of the northwest line of the David Berry League between La Grange and Muldoon. It is believed the company has located a fault. The Texas Company used geophysical instruments over the same tract and has some acreage. National Oil Co. has just drilled a dry hole a little to the west but it is believed now that it missed the structure by only a short distance and will likely move to the east and north and drill another test to around 2,500 feet.

Duval County

Magnolia Petroleum Co.'s No. 1 Corbett, Survey 96, located 1,074 feet northwest lines, 1,042 feet northeast lines, is derrick.

Jim Hogg County

Deep Rock Oil Co.'s (M. E. France) No. 1 Kelsey, located 14,167 feet west of north half of San Rafail grant, is rigging up.

Starr County

Ohio Oil Co.'s No. 1 Bass, Porcion 76, Block 71, is drilling. U. S. Oil & Gas Co.'s No. 1 Kelsey, located 1,500 feet north line, 500 feet west line, at 80 feet, standing, previous reports in error. The Texas Company's No. 1 V. C. de Guerra, Porcion 68, Share 92, located 600 feet east line, 6,280 feet south line, at 3,230 feet is drilling.

Webb County

G. S. Lumpkin's No. 1 H. Yeager, Porcion 33-34-35, Block 17, Harry L. Fansler Subdivision, located 1,170 feet east line, 150 feet south line, is location. L. W. Nelson's No. 1 Moglia, Survey 672, located 150 feet east line, 2,584 feet south line, at 2,725 feet has resumed drilling Usher Carson's No. 2 D. Benavides, Survey 1,613, Block 11, located 150 feet north and west lines, at 1,005 feet is standing.

Zapata County

National Oil Co.'s No. 1 Don B. Adams, Share 8, Borrego Grant, at 690 feet is standing. John Pappas' No. 1 Cuellar, Porcion 33-34, Block 5, located 333 feet northeast lines, 194 feet southeast lines, at 1,408 feet tested gas, set casing at 1,408 feet. Buck & Coursey's No. 1 Garza, Block 47, located 150 feet northwest and northeast lines, at 600 feet is drilling; No. 1 Trebino, Block 2, Porcion 2 and 3, Survey 1, located 150 feet southeast and southwest lines, is rigging up.

Bastrop County

Gypsy Producing Co.'s No. 1 Lottman estate, located center of Town Tract No. 143, at 2,567 feet is drilling. Gulf Production Co.'s No. 2 W. N. Bell, Riley

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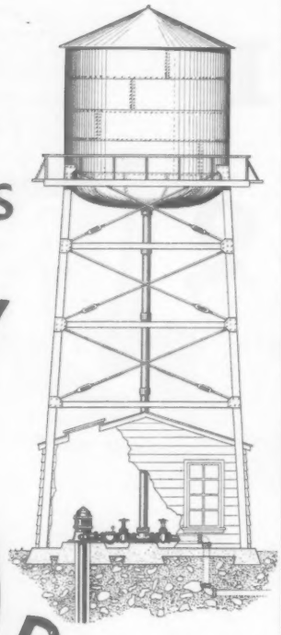

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Survey, located west central part of lease, is location. Jim Harper and others' No. 1 R. R. Mitchell, Bastrop Subdivision, located 150 feet north of center of south line Block 105, is location. Howell Oil Corp.'s No. 1 F. Wichman, S. H. Castleberry Survey, located 150 feet east and south lines, at 600 feet is drilling. Humble Oil & Refining Co.'s No. 1 B. Haywood, C. S. Smith Survey, located 200 feet north line, 150 feet west line, is location. E. W. Ogden's No. 2 M. M. McCall, Stephen F. Austin Survey, located 50 yards west of No. 1 at 2,912 feet stuck drill stem, trying to pull.

Atascosa County

Amphion Oil Co.'s No. 1 Sam Schlisser, Farm B, located 300 feet northeast lines, 600 feet southeast lines, at 2,100 feet, topped Taylor marl at 2,085 feet.

Bexar County

Balcones Oil Corp.'s No. 1 F. A. Jackle, Alexander Bailey No. 184 Survey, located 300 feet north and west lines, at 1,225 feet coring in lenticular sands, showing oil and gas. Indian Creek Oil & Gas Co.'s No. 1 W. Wolfsohl, J. A. Navarro No. 5 Survey, located 180 feet west of center of east line, at 1,597 feet run casing and set packer, bailing through to test. Moore-Jauer's No. 1 Holly R. Ellison, T. York Survey, located 2,916 feet east line, 1,500 feet south line, is standing at 1,198 feet. J. Morgan Russell's No. 1 G. A. C. Halff, city limits of San Antonio, Lot 5, Block 8, at 20 feet is setting casing to shut off surface water. B. L. Raborn's No. 1 Englemann, John James Survey, No. 73, located 300 feet south line, 600 feet east line, at 1,715 feet is standing.

Blanco County

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet north line, 660 feet east line, at 214 feet is shut down. Sam Hohenstein's No. 1 Tom Beauchamp, 1 mile north of Rodson's No. 1 Glasscock, is location. Albert Moursund, Joseph Duel Survey, 1 mile south of Johnson City, is ready to spud in. Robert A. Rodson's No. 1 Glasscock, W. M. McDonald Survey No. 50, located 150 feet west of center of east line, at 962 feet is waiting on string of casing; No. 2 Glasscock is location. Forbes & Winans' is location.

Brooks County

A. W. Dinn's No. 1 J. G. Ramas, La Mestena Survey, Block 5, southeast corner, at 400 feet is drilling; No. B-1 Garcia at 450 feet is drilling; No. 1 Salado, Block 5, La Mestena Survey, center of Block 5, is location. Houston Oil Co. of Texas' No. 1 Lassiter, Survey 69, Block 11, located 330 feet south and east lines, is ready to spud in. Milam Drilling Co.'s No. 3 Riley Allen, 40 feet north of No. 1, spudded in.

Caldwell County

H. C. Ratcliff's No. 1 J. E. Cardwell, John P. Bell Survey, located 150 feet out of the northwest corner, is location. John T. Callahan and others' No. 1 W. Ellison, House Survey, located 750 feet east line, 150 feet south line, is moving in rig. Magnolia Petroleum Co.'s No. 2 H. M. Lochman, Guadalupe College Survey, located 150 feet south and west lines, at 2,184 feet is drilling. Russell's No. 1 Hill, McCullough Survey, located 5 miles north of Lockhart, at 547 feet is standing. Whittington and others' No. 1 J. G. Horner, Francis Berry Survey, at 1,320 feet is standing partially rigged up.

DeWitt County

Gibson & McIntire's No. 1 William Von Roeder, W. G. Hill League Survey, located northwest corner of tract, is location.

Edwards County

A. M. Griffith's No. 1 Wardlaw, S. 60, B. V8, J. S. Clift Survey, located 1,050 feet west lines, 150 feet south line, at 2,000 feet is drilling.

Fayette County

Marshall & Moore's No. 1 John A. Kerr, M. Muldoon League No. 5, located about 250 varas north line and a little west of center, at 2,485 feet has 31 feet of rock (lime) reaming through rock.

Gonzales County

Alexander & Smith's No. 1 Billings, G. Gwinn Survey, northwest corner, is shut down at about 600 feet. Joe Bruner's No. 1 R. D. and J. C. Miller, David J. Kent Survey, 3,040 feet north line, 200 feet east line, at 2,712 feet is moving in another boiler. Crown Petroleum Co.'s No. 1 Mrs. Hattenback, James Jones Survey, 900 feet east line, 200 feet south line, at 1,950 feet is drilling. Finnell & Elam's No. 1 J. F. Robinson, J. Liverpool Survey, 5,558 feet west, 2,640 feet south lines, at 600 feet is drilling. Hoffman and others' No. 1 Mrs. N. J. Steubing, John T. Smith Survey, in northeast corner of the county north of Waelder, is making location. Linderman Brothers' No. 1 F. H. Frampton, Richard Heath Survey, 2,120 feet north line of creek, 1,930 feet east line of farm, at 1,000 feet expects to resume drilling soon.

Fort Bend Oil Co.'s No. 1 C. E. Ham, John Adkinson Survey, 3½ miles from Waelder, at 1,450 feet cored shale formation oil show. Frank Sorrell's No. 2 Wilkenson, located 100 feet west of No. 1, at 175 feet is standing.

Goliad County

Humble Oil & Refining Co.'s No. 1 A. E. Taylor, 1 mile northwest of No. 1 Reitz, at 410 feet is drilling.

Guadalupe County

W. E. Clark and others' No. 1 Survey M. Miller, location made and contract let. L. W. Conner and others' No. 1 William Weinaug, Robert Hall Survey, located 150 feet out of southwest corner, has spudded in. Grayburg Oil Co.'s No. 2 Sophie Haensel is location. A. G. Kifer's No. 1 B. B. Dix, Ira Nash Survey, 610 feet north of road, 320 feet east line, is standing at 1,050 feet. Magnolia Petroleum Co.'s No. 1 Ed Adams, S. Highsmith Survey, 150 feet from center of southwest line, at 2,525 feet is drilling. Mid-Kansas Oil & Gas Co.'s No. 1 Ramon Gonzales, southeast of No. 1 C. Lehman, is probable location. Miller Brothers' No. 1 Gib Springs, E. Cortari Survey, 600 feet southeast of C. N. White's No. 1 Gib Springs, 450 feet west lines, 775 feet south lines, at 2,624 feet tester and joint above came up covered with oil and dobie. T. H. Pool's No. 1 C. Woehler, John King Survey, 310 feet north line, 210 feet east line, at 2,354 feet is drilling. L. W. Steiren's No. 1 S. H. Hermann, J. W. Ragsdale Survey, 600 feet south of center of north line, has spudded in. Tidal Oil Co.'s No. 1, Williamson Survey, is location. The Texas Company's No. 1 Dallas Wilson, Jacob C. Darst Survey, 750 feet west line, 150 feet north line, moving in derrick and machinery. Walton's No. 1 Nolte, 3 miles southeast of Seguin, has derrick up.

Karnes County

Hurador Oil Co.'s No. 1 W. E. Porter, 800 feet north line, 250 feet east line, at 1,543 feet is drilling. Scott Townsend and others No. 1 Ruckman, 2,000 feet southeast line, 1,800 feet northeast line, at 1,250 feet took core in Fayette that tested gas under ether.

Kendall County

C. W. Gould and others' No. 1 A. J. McCrocklin, 10 miles northeast of Sisterdale, has spudded in and set surface casing.

Kerr County

McMan Oil & Gas Co.'s No. 2 Walter Schreiner is location. L. R. Page and associates' No. 1 Real, Block 15, K.C. S.L. League No. 2, is drilling at 1,040 feet, had about 200 feet of Trinity sand. Driller estimates log is running 211 feet high.

Kimble County

Carl L. Bryant's No. 1 C. E. Lambert ready to spud in. H. A. McLean & Jamison's No. 1 R. F. Cannon, Section 741, Cochran Survey, 300 feet east line, 2,640 feet south line, at 600 feet; oil showings a little below 600 feet. J. B. Lindsay's No. 1 G. C. Amderson, Section 167, B. Huiger Survey, 1,320 feet north and east lines of Section 167, at 100 feet is setting 15½-inch surface casing.

LaSalle County

J. G. Nix's No. 1 Coleman, Survey 68, Block 4, located 150 feet north line, 500 feet west line, is rigging up.

Kinney County

Lloyd Oil Co.'s No. 1 G. B. Moore, No. 117 S .S. Maverick Survey, 1,320 feet south of center of north line, at 1,000 feet is shut down in Del Rio, hole full of water from 300 feet. Mardon Oil Co.'s

No. 1 Jim Clamp, John Winters Survey No. 346, located 5,360 feet west line, 5,675 feet south lines, at 2,540 feet total depth.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 2 Indio Ranch, A. Rivas Survey, northeast corner, at 1,320 feet total depth. Rycade Oil Corp.'s No. 3 Chittim, Section 116, Block 7, I.&G.N., located 10 feet west line 2,555 feet south line, at 3,627 feet is drilling; No. 4 J. M. Chittim, Section 104, Block 7, I.&G.N., east central part of lease, at 3,050 feet is drilling; No. 4 Sullivan, Section 112, Block 7, I.&G.N. Survey, east central part of lease, at 1,300 feet is drilling.

Medina County

Pat Armstrong's No. 1 C. W. Butts, 1,240 feet northwest corner, 1,000 feet east line, is derrick. California-Medina's No. 1 Rothe at 3,426 feet resumed drilling after being shut down. Donaldson Oil Co.'s No. 2 Adams, Joseph Hillemeyer Survey, 1,000 feet northeast of No. 1, is location. Lynch and others' No. 1 Mott at 580 feet is standing. Pearson Oil Co.'s No. 1 Suburban Farms, Isaac S. Palmer Survey, 300 feet north line, 150 feet east line of farm tract 2-A, 3,000 feet south of railroad, at 1,070 feet is making gas; had serpentine and heavy oil from 935 to 1,050 feet, deepened to 1,050 feet and came in gas. Rawdon-Hughes and others' No. 1 T. J. Bendele, Survey 593, located 600 feet west line, 150 feet south line, has resumed drilling at 815 feet; No. 1 A. L. Haegelin, Joseph Barnhart Survey, is drilling; No. 2 Bendele, Survey 593, located 75 feet north of No. 1, at 937 feet is standing; had show of oil at 915 feet. Cecil Switzer's No. 1 Zerr is fishing for broken cable below 3,700 feet. W. W. Woodworth's No. 1 Reinhart, J. Hall Survey, located 450 feet south and east lines, at 1,964 feet is shut down, 50 feet in Edwards, dry. Zigzag Oil Co.'s No. 1 San Antonio Subdivision Irrigation Farms, Cabel Kemp Survey, 300 feet west lines, 1,496 feet south line, at 2,121 feet topped chalk; company considers it rather low.

Milam County

J. M. Burkhead's No. 1 C. Weigham, A. Pollard Survey, 1,075 feet north line, 450 feet west line, at 1,400 feet is drilling in chalk. E. L. Chapman's No. 1 J. M. Gilchrist, J. J. Acosta Survey, 150 feet north and west lines, at 2,243 feet drilling topped Edwards; No. 1 E. G. Knight moving in rig. H. E. Elliott and others' No. 1 J. C. Moore at 1,500 feet is drilling in chalk. Groneman Brothers' No. 1 Dornhofer is at 2,580 feet drilling. Hill & Bonwell's No. 1 B. Booher, James Welch Survey, 822 feet south of north line, 173 feet west line, at 2,007 feet is drilling. Wilson and others' No. 1 Johnson & Stiles, J. J. Acosta Survey, is location. Elbert Williams' No. 1 Tom Shigut, Davis Survey, 150 feet east line, 400 feet north line, is rigging up. A. H. Wray's No. 1 D. D. Fowler, William McFadden Survey, 1,320 feet north and east lines, is setting 10-inch surface casing at 110 feet.

McMullen County

Natt Holman's No. 1 Shiner, Henry M. Brewer Survey, 7,515 feet south of Nueces River, 3,084 feet east line of survey, at 790 feet is standing.

Nueces County

Pearson and others' No. 1 Bluntzer, Block 3, at 3,507 feet is standing. R. & G. Corp.'s No. 1 Emily Wright Perkins, W. W. Wright Survey, 150 feet west line, 1,920 feet south line, at 3,510 feet is standing; No. 1 Roberts is location; No. 1 Ragland at 3,003 feet is standing. Nueces River Basin Development Co.'s No. 1 F. C. Allen, G. Farrier Survey, 1,596 feet south line, 474 feet west line, at 3,464 feet is drilling.

San Patricio County

Houston Gulf Gas Co.'s No. 3 Welder, 3 miles east of Welder Switch, north of Sinton, at 2,600 feet is drilling. George B. Pickett's No. 1 Whitworth, NW NW Section 60, at 3,318 feet is fishing for six joints of drill stem.

Victoria County

Humble Oil & Refining Co.'s No. 1-A Kohutek, S.A.&M.G. Survey No. 5, located 1,945 feet southwest lines, 900 feet northwest lines, is location; No. 1 G. Knape, Section 6, I.R.R. Co., is location; No. 1 G. F. Oliver, J. H. Poindexter Survey, 2,489 feet southeast lines, 3,023 feet northeast lines, at 176 feet setting surface casing; No. 3-A J. J. Welder, D.I.& C. Survey, 1,634 feet southeast lines, 736 feet southwest lines, at 2,000 feet is drilling.

Williamson County

J. C. Hawkins, 1½ miles northwest of Thorndale, southwest of discovery well, partly in Williamson County, to be a Trinity test drilled in Williamson County.

Zavala County

Tritex Oil Co.'s No. 1 Clay Burns, 2 miles northwest of gas wells on West ranch, at 780 feet is drilling; No. 4 West at 795 feet is drilling, showing a little gas; No. 1 Childress in townsite of La Pryor at 1,095 feet is drilling. Witherspoon Oil Co.'s No. 1 Ike Pryor, at 550 feet is setting casing in brown shale, hole caving.

LOUISIANA-ARKANSAS

(Continued from Page 56)

water with about 2,000,000 feet of gas.

Elm Grove — Woodley Petroleum Co. made location for No. 6 Whitehurst in Section 34-16-12, 20,998 feet east and 1,584 feet north, southwest corner of the township.

Caddo Parish

Hosston — Bayou State Oil Corp. is drilling No. 17 Levee Board at 850 feet.

Greenwood — Eastern Carbon Co. set 2½-inch tubing with packer at 2,710 feet on No. 4 Bryson, Section 8-17-16, and got 5,000 feet of gas at 1,025 pounds and lots of salt water and is shut down for orders at 2,773 feet.

Dixie—Gold & Sklar are drilling gummy shale at 2,277 feet on No. 1 Hunter, Section 17-19-14. Gulf Refining Co.'s No. 3 Oden, Section 18-19-14, set 158 feet of 10-inch, topped gas rock at 850 feet and is drilling chalk at 1,500 feet; No. 4 set 10-inch at 72 feet and is drilling at 630 feet. Ohio Oil Co.'s No. 1 Hunter estate is fishing for swab in a hole full of oil, total depth 2,414 feet. Palmer Corp.'s No. 1 Hunter, Section 8-19-14, set 12-inch at 120 feet. Ray-Dawes Drilling Co. has rig up on No. 1 Hunter, Section 8-19-14, formerly reported as Walter Ray's No. 1 Hunter. Standard Oil Co. set 10-inch at 97 feet on No. 2 Henderson, Section 8-19-14, and is drilling chalk rock at 1,562 feet; No. 5 Hunter, Section 17-19-14, set 10-inch at 90 feet and is in gumbo at 1,818 feet; No. 2 Oden, Section 18-19-14, set 10-inch at 97 feet and is drilling gas rock at 863 feet.

Oil City—W. D. Chew set 4½-inch at 2,282 feet on No. 5 fee, Section 33-21-16, and is bailing 8-inch casing cemented at 1,216 feet on No. 1-B fee, in the same section. Magnolia Petroleum Co.'s No. 18 Doan-Thigpen, Section 6-20-15, is shut down at 3,247 feet. Shreveport Oil Corp. plugged back from 2,156 feet to 1,640 feet on No. 1 Cheshire, Section 32-21-15, which is shut down for orders with 900 feet of oil in the hole.

Pine Island—Dixie Oil Co.'s No. 92 Dillon, Section 13-21-15, cored lime, pyrites and shell at 6,164 feet; No. 98 is drilling at 1,695 feet. Magnolia Petroleum Co.'s No. 18 Dillon, Section 24-21-15, cored sandy shale at 4,519 feet.

Claiborne Parish

Homer—Oakes and others' No. 1 Richardson, Section 19-21-7, is drilling at 900 feet.

LaSalle Parish

Urania—Arkansas Natural Gas Corp. is arranging for a drill stem test of 8 feet of sand on No. 13-M Urania, Section 19-10-2e, total depth 1,585 feet. O. W. Clark's No. 1 Tullos, Section 23-10-1e, is drilling at 250 feet. Louisiana Oil Refining Corp. has derrick up for No. 39-B Tremont, Section 25-10-1e.

Monroe District

Morehouse Parish—Grecian Bend Oil Co. made location for No. 1 Seacrease, 2,025 feet south and 203 feet west NE cor. SE, Section 14-20-4. J. S. Herkness set 6-inch at 2,175 feet on No. 6 Bowles, Section 17-20-5. Interstate Natural Gas Co.'s No. 2 Flemming, Section 15-20-4, set 6-inch at 2,110 feet. Natural Gas Producing Co.'s No. 15 Tensas, Section 4-

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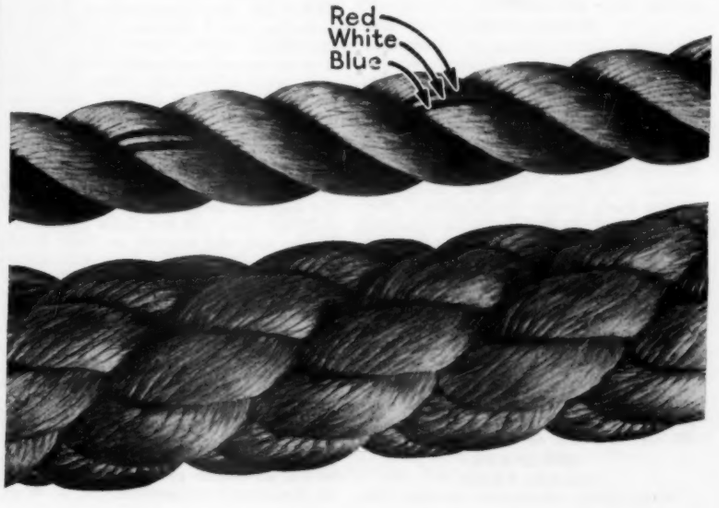


22-4, set 12-inch at 174 feet. Southern Carbon Co. set 6-inch at 2,117 feet on No. 10 Tensas, Section 2-20-4; No. 11 Tensas, Section 31-21-4, set 12-inch at 150 feet and 8-inch at 890 feet.

Ouachita Parish—Austin & Jordan are rigging up on No. 1 McGuire, Section 11-18-3. G. E. Jordan's No. 2 Rean & Green, formerly carried as No. 1 on the same lease, is a derrick. La-Del Producing Co.'s No. 48 fee, Section 31-20-5, is drilling at 1,735 feet. Mack & Pipes are drilling at around 100 feet on No. 1 Burke, Section 7-18-5; No. 1 Cagle, Section 7-18-5, set 6-inch at 2,168 feet. Magnolia Petroleum Co.'s No. 1 fee, Section 2-18-3, is drilling at 1,588 feet; No. 4 U. S., Section 20-19-5, is drilling at around 100 feet. Ouachita Natural Gas Co.'s No. 10 Smith, Section 40-20-4, is drilling shale and boulders at 1,851 feet; No. 11 set 6-inch at 2,090 feet. Southern Carbon Co. set 10-inch at 189 feet and is drilling at 750 feet on No. 53 fee, Section 23-19-4. United Oil & Natural Gas Co. is drilling in the gas rock at 2,108 feet on No. 4 Guthrie, Section 49-20-4.

Union Parish—Bahan & Bahan's No. 1 Barr, Section 10-20-3, set 8-inch at 282 feet. E. S. Hall set 12-inch at 189 feet on No. 2 Spencer, Section 36-21-3. Harrell & Jones' No. 1 Stripling, Section 17-20-4, set 10-inch at 180 feet, 8-inch at 830 feet and is drilling at 958 feet. Interstate Natural Gas Co. set 8-inch at 876 feet on No. 1 Parke, Section 23-20-3, and is drilling at 1,020 feet. Palmer Corp.'s No. 1 Downey, Section 12-20-3, is drilling at 2,135 feet with a showing for about 4,000,000 feet of gas; No. 2 Downey, Section 21-21-3, is drilling at 1,575 feet.

Red River Parish

Gulf Refining Co. is cleaning out heaving sand and shale on No. 24 Kennedy, Section 24-13-11, total depth 2,536 feet.

Richland Parish

W. C. Feazel made location 275 feet south and 1,439 feet east NW cor. NE, Section 17-16-6, for No. 1 Haynes & Vincent and has derrick up; No. 1 McCoy, Section 33-16-6, set 12-inch at 202 feet. O. E. Hodge set 6-inch at 2,279 feet on No. 1 W. T. Sartor, Section 16-16-6. Hope Producing Co. set 8-inch at 790 feet and is drilling at 1,190 feet on No. 1 Standard Oil Co., Section 28-17-6; No. 2 Eubanks, Section 26-17-6, set 8-inch at 775 feet and is drilling at 1,188 feet. S. R. Humble has derrick up for No. 1 Binion & Sartor in Section 22-17-6. International Gas Products Co's. No. 1 Beck is a derrick in Section 25-16-6; No. 1 Kate Humble, Section 35-16-6, was dry at 2,455 feet and will go deeper. Palmer Corp's. No. 1 Hardwick, Section 16-17-6, set 9-inch at 915 feet and is drilling at 1,320 feet; No. 1 Jones, Section 22-17-6, is drilling shale at 2,010 feet; No. 4 Rhymes, Section 21-17-6, previously reported as No. 1, is drilling at 1,600 feet and No. 1 Whitten, Section 21-17-6, is drilling at 2,172 feet. Southern Carbon Co's. No. 1-B Tegola, Section 5-15-6, is drilling at 2,240 feet in gummy shale and boulders.

Webster Parish.

Cotton Valley—Magnolia Petroleum Co.'s No. 1 McCook & Hibbler, Section 22-21-10, is fishing for drill stem, total depth 6,091 feet in red shale; No. 5 Robbins, Section 21-21-10, is drilling chalk at 2,322 feet. Ohio Oil Co. is drilling lime and shale at 3,951 feet on No. 43 Bodcaw, Section 24-21-10, and No. 44 Bodcaw in Section 28-21-10, is drilling at 200 feet. Palmer Corp.'s No. 5 Tillman, Section 27-21-10, is drilling in lime and shale at 3,836 feet. Standard Oil Co. set 12½-inch at 473 feet on No. 22-B Bodcaw, Section 28-21-10.

Sarepta & Shongaloo—Magnolia Petroleum Co.'s No. 1 Adkins, Section 4-22-9, is waiting on standard rig to pump with 1,000 feet of oil in the hole, total depth 2,665 feet; No. 1 Sally Cook, Section 2-22-11, set 13⅜-inch at 307 feet and is drilling at 507 feet; No. 1 Roseberry is a location 330 feet north and west SE cor. NW SE Section 19-23-9.

ARKANSAS

Ouachita County

Mount Holly—McDonald Brothers' No. 2-A Wilson, Section 25-15-18, cored sand from 2,758-64 feet that showed water in top and bottom and is coring; No. 3-B Wilson in the same section is drilling at 1,985 feet.

Union County

Champagnolle—Gann and others' No. 1 Doss, Section 10-17-14, set 6⅝-inch at 2,772 feet, total depth 2,802 feet; No. 1 Schmidt is a derrick in the NW cor. Section 15-17-14. H. L. Hunt's No. 7 Gregory, Section 15-17-14, is standing 1,200 feet in fluid, 90 per cent water, from 45 feet of broken sand, total depth 3,242 feet. Lion Oil Refining Co. ran testing tool on No. 1 El Dorado Realty Co., Section 7-17-13, got salt water with a show of oil at 3,020 feet and is coring at 3,030 feet. Oilwell Corp. has derrick up for No. 2-E Perdue, 330 feet north and west SE cor. NW NE Section 9-17-14. Rovenger Oil Corp.'s No. 3-B Perdue is a derrick 330 feet south and west NE cor. SE NE Section 9-17-14. Rushing and others junked No. 1 Lynn, Section 7-17-13, at 2,991 feet, skidded 26 feet, set 10-inch at 148 feet and are drilling at 810 feet on second hole.

El Dorado—Gulf Refining Co. got drill stem stuck in No. 2 Gaddy, Section 30-17-14, and is backing off with 17 joints in the hole, total depth 3,691 feet. J. F. Hawkins' No. 1 Goodwin, Section 8-17-15, is shut down at 2,200 feet.

Smackover—E. L. Chapman has rig up on No. 1 Purifoy, Section 2-16-16. A.H. Ramage set 10-inch at 66 feet on No. 1-A James, Section 6-16-15, and is drilling at 1,500 feet.

EAST TEXAS

Harrison County

Eureka Natural Gas Co.'s No. 4 Vaughan, W. R. Anderson Survey, is drilling at 1,920 feet; C. H. Lyons and others' No. 6 Furrh, James Short survey, is drilling at 890 feet; No. 1 Rudd, W. R. Anderson Survey, is fishing for 3-inch liner, total depth 2,351 feet; No. 1 Saye, E. M. Jenkins survey, set 43 feet of 10-inch and is drilling at 150 feet.

Panola County

Calatex Oil & Gas Co. is reaming to bottom on No. 4 W. C. Agurs, J. Womack Survey, total depth 2,830 feet. Eureka Natural Gas Co. set 63 feet of 10-inch on No. 1-B Gully, James Matthews Survey, and is drilling at 840 feet. Magnolia Petroleum Co. is arranging to deepen No. 3 Ella Baker, J. Womack Survey, completed as a 2,000,000-foot gas well at 980 feet; No. 16 Carrie Steele, B. C. Jordan Survey, is rigging up. Nemours Corp. No. 4 Tiller, E. F. Mitcheson Survey, set 42 feet of 10-inch and is drilling hard lime at 2,479 feet; Nos. 1 to 4 were completed by J. H. Askew. The Texas Co. set 6-inch at 972 feet on No. 11-A Adams, S. B. Lacy Survey and No. 12-A Adams is a location on the same lease. D. Thomason's No. 1-B Mays in the Jane Thorpe survey is drilling at 1,200 feet.

LA.-ARK. WILDCATS

(Continued from Page 56)

Norton got their first encouragement in deepening No. 1 Fortner, Section 32-23-16, Caddo Parish, when they tested a show of gas with salt water through drill stem from 4,566 feet. The well, now drilling black sandy lime at 4,588 feet, is the first to reach anything like this depth on the west side of the parish, or anywhere else in Caddo outside of Pine Island, or to show anything below the hitherto explored formations outside of the deep pay area.

It was reported last week that J. R. Bahan had sold a block of stuff in the Monroe district to the Dupont interests for $35,000, but Nemours Corp., a Dupont organization, now denies this is so. They have a bunch of stuff in the Monroe area but have not taken on any new acreage.

In Claiborne Parish J. H. Houseman of Homer has assembled a 10,000-acre block centering on Sections 32-23-5, adjoining Southern Crude Oil Purchasing Co.'s block on the northeast, and Tulsa interests who usually trail T. B. Slick in his operations are reported interested in Houseman's proposition. T. T. Word of Fort Worth is reported to have 10,000 acres in the NW cor. Township 23-7 and NE of 23-8 overlapping into Columbia County, Arkansas, on which he plans a 4,000-foot test if he can get the support he wants. This stuff is northwest of Slick's 30,000-odd acre block northeast of Homer.

In Columbia County, E. M. Jarrett, of El Dorado, has 3,500 acres centering on a tentative location in the NE cor. SW SW Section 22-16-20, and Leonard Preston, also of El Dorado, has a fairly solid block of 3,000 acres centering on Section 32-16-20, commercial leases, which they are offering on the usual terms. In Drew County McClintock & Goodka are reported planning to go back to No. 1 Ogle in Section 35-13-5, which they abandoned at 2,575 feet as a junked hole a year ago, try to get the fish out, and go on to 3,500 feet.

To Test Acreage

Pure Oil Co. has assigned O. W. Estes the SE SE and NE SE Section 23-17-14 Union County, for a well. This stuff, plus some more Estes has adjoining, is 1 mile to 1½ miles south of production in the older Champagnolle district and about 2 miles east of the small pumpers Root Refineries, Inc., got shortly after the effort to stretch Champagnolle production began and Estes' well is apt to be a rather interesting test. Between Champagnolle, El Dorado and Smackover production, J. P. Hawkins' No. 1 Goodwin is attracting favorable attention. The well, in Section 8-17-15, tested 2,000,000 feet of gas through drill stem from 2,195 feet in the Nacatoch and is shut down while, it is reported, Hawkins and his associates are buying more acreage. Ohio Oil Co. has made location for another test in Calhoun County, No. 1 Stout Lumber Co. in Section 31-14-12.

Northern Arkansas, rather the Arkansas River Valley, continues the happy hunting ground of land men for organized interests as well as independent lease hounds. Two reports shortly are to be issued on this area, one in particular by the Arkansas Geological Survey and it appears both classes are taking everything in previous reports to forestall others who are waiting on this forthcoming survey. At any rate there is in excess of 40 blocks ranging from 3,000 to 40,000 acres that have been taken, but only a half dozen, possibly less, made a matter of record. For location of these blocks take a map of Arkansas and scatter them through all counties traversed by the river or bordering those traversed by it.

At this time that is about as accurate a description of locations as can be made in a review of this sort. Shortly, however, The Oil and Gas Journal will publish a map of that part of the state, showing the general location of each. Dr. J. S. Martin and associates, of Little Rock, are reported to be moving cable tools to drill No. 1 Scanland in the SE cor. NW Section 5-9-13 Van Buren County near Bee Branch, and to have location for another test near Scotland on the same block. Gold Creek Oil & Gas Co.'s No. 1 Stermer, Section 17-4-13, Faulkner County, 8 miles south of Conway, is fishing for lost joints of 6⅝-inch casing, total depth 3,834 feet.

R. Pierce Oil Co. is reported rigging up on two cable tool jobs between Siloam Springs and Gentry, Benton County, both of which are to be deep tests for oil unless gas in commercial quantities is encountered. Previous geological surveys seem to favor gas more than oil in all this Arkansas Valley territory; which is one reason gas companies active in north Louisiana and Oklahoma and their subsidiaries or affiliated companies are the most active in this preliminary work. R. Pierce Oil Co. also has a 3,000-acre block north of Lincoln in Washington County, but the description is lacking.

Gulf Refining Co. will make the first of its long series of core tests on the Hatchetigbee anticline in southwestern Alabama near Bladon Springs, Choctaw County, more particularly described as "at the Thornton house;" and that is as close a location as any available.

Arkansas Natural Gas Corp. got all the lost casing out of No. 1 Rye, Section 22-15-17 Monroe County, Mississippi, reamed down and was resetting 5-⅜-inch when it collapsed 50 feet off bottom, total depth 3,376 feet. Eighty-nine joints were pulled, leaving 17 in the hole.

Lion Oil Refining Co. is blocking around Section 7-5-2, Rankin County, and will drill another hole north of the recent Misterfeldt test in Section 2-4-1e, same county. Love Brothers, or Cleve Love, are reported organizing to drill two wells in the same area, one on the Gambel land in Township 5 R. 1-e and the other on the McLauren land in Township 5 R. 2-e, the block aggregating approximately 7,000 acres. Whichever of the two has made the best showing by the time they top the lime will be made a deep test. Philps Brothers No. 1 James in Section 20-11-5 Yalobusha County had 4 feet of hard pebbly sand at 2,651-55 feet and were to run testing tool. A previous drill stem test in broken sand and shale at 2,350-70 feet failed when the seat gave way. Several shows of gas have been claimed for this wildcat. The Sun Oil Co. has shipped a cable tool rig to Pocahontas, Madison County but where the test is to be located has not been learned here.

NORTH LOUISIANA

Bienville Parish

W. G. Gray's No. 1 Snyder, Section 15-16-6, is drilling lime at 2,400 feet.

Bossier Parish

J. F. Palmer has rig up for No. 1 Schnitt, 1,980 feet north and 660 feet west SE cor. SW SE, Section 14-17-12.

Caddo Parish

D. C. R. Oil Co.'s No. 1 Oden, 264 feet south and west NE cor. NW, Section 20-19-14, set 85 feet of 10-inch, topped the gas rock at 812 feet and is drilling shale at 1,150 feet. Gold & Sklar's No. 1 Hunter, Section 17-19-14, is drilling gummy shale at 2,277 feet. Humble Oil & Refining Co. and R. W. Norton's No. 1 Fortner, Section 32-23-16, tested salt water with a show of gas at 4,566 feet and is drilling black sandy lime at 4,588 feet. Simplex Oil Co.'s No. 1 Dickson, Section 33-20-14, is drilling chalk at 1,530 feet. Woodley Petroleum Co. made location 22,991 feet east and 1,273 feet north SW cor., Section 35-16-12, for No. 4-A Knight, and is arranging to deepen No. 1-B Knight in Section 11-15-12, completed August 7, 1927, as a 1,000,000-foot gas well at 1,936 feet.

DeSoto Parish

P. J. Becker is drilling chalk at 1,800 feet on No. 1 Tull, Section 23-12-15, Benedum & Trees Oil Co.'s No. 2 State, Section 22-14-12, tested salt water with a show of gas at 2,617 feet and is going deeper. Lide & Ford made location 200 feet north and east SW cor. SE SW, Section 32-12-11, for No. 1 Nabors. Magnolia Petroleum Co.'s No. 2 Mason is a location 330 feet north and west center Section 28-12-11. D. Thomason's No. 1 Nabors, Section 6-12-11, is drilling around 100 feet.

Jackson Parish

George O. Baird's No. 1 Tremont, Section 24-16-1w, cored crystallized lime at 2,752 feet.

LaSalle Parish

Tunica Petroleum Co. set 40 feet of 10-inch on No. 47 L. & A., Section 17-7-2e, and is drilling at 500 feet.

Ouachita Parish

Farish & Russell's No. 1 School, Section 16-16-4, is drilling at 3,790 feet.

Red River Parish

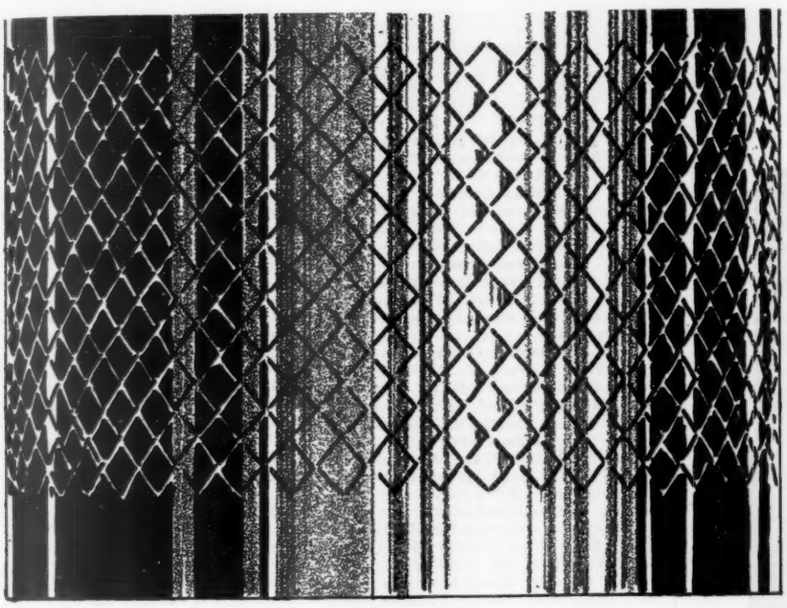
Eylers Oil Co. tested salt water in 4 feet of sand, corrected depth 1,595 feet, and is reaming to bottom, total depth 1,600 feet.

Richland Parish

Austin & McDonald's No. 1 Millsaps, Section 17-17-6, cemented 6-inch at 2,308 feet. Palmer Corp.'s No. 1 Miles, Section 11-17-6, was dry at 2,428 feet and 2,456 feet and is bailing for a third test at 2,476 feet.

Union Parish

J. E. Cammatte's No. 2 Tugwell, Section 21-22-1e, taken over by a group of Monroe and Bastrop men, has resumed drilling and is in gummy shale at 2,160 feet. The Texas Company topped red beds at 3,162 feet in No. 1 Fuller, Sec-



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tion 9-21-2w, and is drilling at 3,311 feet.

Sabine Parish

R. L. Gay is drilling No. 1 Long-Bell, Section 26-8-14, at 1,712 feet; No. 2 Sabine Lumber Co., Section 23-7-14, is drilling at 744 feet. A. H. Tarver is drilling No. 1 Long-Bell Lumber Co., Section 29-8-13, at 3,480 feet in lime.

ARKANSAS

Ashley County

Atlantic Oil Producing Co. and others' No. 1 Young, Section 20-15-7, is shut down at 3,056 feet for water.

Calhoun County

Ohio Oil Co. made location 330 feet south and east NW cor. SW Section 31-14-12, for No. 1 Stout Lumber Co. and has derrick up.

Columbia County

Arpeco Syndicate's No. 1 Dennis, Section 11-20-23, is in chalk at 2,600 feet. T. J. Bush and others' No. 1 Jones, Section 5-17-18, is drilling at 2,717 feet.

Logan County

Arkansas Natural Gas Corp. is cleaning out and bailing No. 1 Hanna, Section 26-7-23, total depth 2,285 feet.

Ouachita County

Lohman and others set 15½-inch at 150 feet on No. 1 Fogle, Section 18-14-16, and are drilling at 1,502 feet. Phillips Petroleum Co. and others have rig up for No. 1 Eagle Mills, Section 11-12-16, Sundby and others have rig up to drill No. 1 Farris in Section 27-15-15. Timberlake and others' No. 1 Wright, Section 25-14-18, is shut down at 2,907 feet waiting orders.

Union County

Arrendale and others have rig up on No. 1 Gallagher & Nelson in Section 18-18-17. W. M. Coates' No. 1 McDuffie, Section 32-19-17, is shut down for fuel, total depth 3,563 feet. Johnson-Gummer Co. is drilling on No. 1 Cargile, Section 4-18-13, at 1,635 feet. Johnson & Foster made location in the NW cor. SE NW Section 18-17-13, ffor No. 1 Oliver.

EAST TEXAS

Shelby County

Gulf Refining Co.'s No. 1 Carraway, J. H. Patterson Survey, cored lime from 5,058-73 feet.

MICHIGAN FIELDS

(Continued from Page 63)

duction. Oil, gas and water were encountered together at 2,073-75 feet. The hole was drilled to 2,080 feet.

New Locations

Rigs have been moved in and are ready to spud on three of the new Muskegon Township locations: Muskegon Oil Corp.'s No. 4 John Yonker, NE NE, Section 7-10-16; Charles W. Marsh and others' No. 6 Ira R. Hallock, NW NW, Section 7-10-16, and L. E. Kennedy and others' No. 4 Charles I. Giles, NE SE, Section 6-10-16. The fourth location is being made by Gerald J. Wagner and others, of Grand Rapids, on the M. L. Diamond lease, SE NW, Section 5-10-16.

The Johnson Oil Refining Co., which has drilled more wells in Laketon Township now than any other, made both locations in Laketon Township; No. 4 Frank Cihak and No. 4 A. Grotefeld, both located NE NE, Section 12-10-17.

Another Oceana County wildcat well has been plugged and abandoned as a dry hole in the Traverse, Dundee and Niagara formations. It is the Pennsylvania Oil & Gas Co.'s No. 1 Bert Snow, NW SE, Section 23-15-15, Leavitt Township, about 10 miles north of Hesperia.

C. J. Sipple, independent operator, has moved his standard rig from his original location on the Iroquois Trust, SE NE, Section 35-13-17, Grant Township, about half a mile north and east to the northeast quarter of the southeast quarter of the same township and section. The well is rigging on the new location.

Muskegon Oil Corp. abandoned its No. 1 V. J. Boone test well, SE SE, Section 3-16-17, Weare Township, south of Pentwater. Quicksand at 490 feet caused abandonment.

Newaygo County

The Melrose Oil & Gas Co.'s No. 1 Woodward and Hatch, SE SE, Section 5-12-12, Brooks Township, Newaygo County, near Newaygo, is pumping between 1,500 and 2,000 bbls. of fluid a day from the upper Traverse formation of which about 100 bbls. is oil. This is the first wildcat within one county range of the proven Muskegon Field to make commercial production. It had the best showing of oil flowing at an estimated rate of 500 bbls. a day with several million feet of gas until water was struck. It was dry in the Dundee and plugged back to the upper Traverse.

A new wildcat will be started soon in Troy or Lilley Township in the northern part of the County by Charles Rigler, former National League umpire, and a group of Boston and eastern capitalists. Mr. Rigler, a former representative of the East Ohio Gas Co., recently purchased the oil and gas rights on 2,500 acres checkerboarded through a 5,500-acre tract owned by Judge Harry D. Jewell, Mrs. Charles R. Sligh and Fred Jean, all of Grand Rapids.

Three wells will be started west of Bitely near the Greening holdings on M-37.

Lake County

P. E. Millis & Co. has been awarded the contract for a new Lake County wildcat, one of the first to be drilled there by other than Taggart and Welsh, now operating as the Peerless Oil Co. The new well will be located on the Jess Cummings farm, SE NW, Section 32-18-14, Sweetwater Township, Mason County. It is being drilled for Frank A. Brindel, of Canton, Ohio, and Sam J. Brindel, of McKeesport, Pa., operating as the Brindel Brothers. A rig is being moved in.

The Fisher-Robbins Oil & Gas Co., of Pittsburgh, Pa., has acquired leases on between 4,000 and 5,000 acres in Springdale, Arcadia and Cleon Townships, Manistee County, and will soon start the first wildcat in this western Michigan county. It will be located in either Arcadia or Springdale Township.

The deepest well ever drilled in Michigan is located near Manistee and was drilled by the Ruggle and Rademaker salt company to a depth of more than a mile. The log of this well has never been made public. One other well was drilled near East Lake but was abandoned before it was deep enough to reveal any important information on structures in this part of the State. More than 100,000 acres, or one-fourth of the area of Manistee County, is under lease.

Southwestern Tests

Numerous test wells are being planned over many of the western and southwestern counties of the state. Word comes that a test well is being started on the Gustave Villwock a short distance northeast of Buchanan, in Berrien County and between Buchanan and Niles.

Three counties close together are getting an active leasing campaign, being Van Buren, Cass and Berrien, also Allegan, in which a little excitement took place a number of years ago when a well that was reported around 15 bbls. was found. Many old-time Trenton Rock operators visited the well and numerous leases were taken, but no further test work was done at that time and later W. L. Connelly drilled a well in Cass County, but failed to find anything worth while. Most all of the large operating companies are securing blocks of acreage not alone on the Michigan side, but in the northern part of Indiana in what is known as the Kankakee Valley where considerable shallow production was found in the early 90s by an English syndicate. Many of the 1,300 or more shallow wells drilled in Jasper and Pulaski Counties are still there, but nothing has been done with them for many years. The natives when they want oil for their automobiles, go to the shallow wells dip it out and put it in their engine. The shallow sand runs from 50 to around 200 feet and the Trenton is found at from 850 to 1,000 feet, but in the south end of the two counties, later tests show that the oil is drowned out by fresh water. This may not be the case in Laporte, St. Joseph Counties, which are along the Indiana-Michigan line, nor north of the state line. In two wells in the town of Francisville, in the southwestern part of Pulaski County, good oil was found in the Trenton and heavy gas was found in the Clinton formation at around 600 feet. A well

drilled a mile or so southwest from Francisville in the Clinton lime sand, produced a gas well of large volume that blew wide open for close to 15 years.

KANSAS FIELDS

(Continued from Page 54)

new well is the first producer in the county west of the Little Arkansas River.

Courtney B. Davis is completing a well in the Davis Pool northeast of Hillsboro, in the NW SW NW, Section 7-19-3, Marion County. It swabbed 97 bbls. in 10 hours from the lime pay at 2,005-21 feet. After a shot it was estimated to be good for 250 bbls.

A small show of gas was encountered in the J. H. Tatlock and others' No. 1 Hoyer, C SW NE, Section 32-20-1w, McPherson County, the gas coming from chat at 2,972-75 feet. Before drilling deeper 8-inch casing will be underreamed to make test of this showing.

Sedgwick County Production

The production by companies and leases in the Sedgwick County area for June 22 is shown by the following:

Company, lease—	S.T.R.	Wells	Bbls.
Aladdin:			
Bennington	6-26-1	2	810
Allison et al:			
Kelly	6-26-1	1	40
Barnsdall:			
Samuel	24-25-1	1	Off
Bu-Vi-Bar et al:			
Branch	6-26-1	2	648
Bright "A"	6-26-1	2	276
Bright "B"	6-26-1	4	2,768
Byers	7-26-1	1	81
Emrich	6-26-1	2	835
T. Goodrich	6-26-1	5	652
Lantz	12-26-1w	1	Off
Corr	1-26-1w	5	4,748
Lyons	7-26-1e	3	2,212
Roll	7-26-1e	1	568
Rothfuss	6-26-1e	1	30
Shawver	7-26-1e	6	5,323
Wright	12-26-1w	4	5,160
Woodard	7-26-1e	1	416
Connell:			
Cross	27-25-1w	1	12
Davis-Skelly:			
Wilson	1-26-1w	8	2,092
Derby:			
Bowling	6-26-1e	1	120
Gorman	6-26-1e	4	1,746
Dickey et al:			
Robbins	21-28-1e	1	445
Gypsy:			
Hammant	14-26-2e	3	1,057
Marland:			
Goodrich	16-25-1e	2	275
Mary Jane:			
Fitch	6-26-1e	2	782
Montour:			
Lavender	6-26-1e	2	972
Patton & Wentz:			
Swenson	6-26-1	1	125
Phillips:			
Difford	1-26-1w	3	186
Piefer	6-26-1e	1	105
Prairie:			
Cross	27-25-1w	1	30
Swyser	36-25-1w	3	320
Pyle & Sutter:			
Caldwell	6-26-1e	2	680
Reynolds & Hays:			
Roll	7-26-1	1	110
Robertson et al:			
Creson	6-26-1	1	650
Shell:			
Fisher	15-26-2	1	86
Lygrisse	15-26-2	1	1,214
Stearns & Streeter:			
Roll	7-26-1	1	535
Tidal:			
Scherger	6-26-1	3	325
Vickers:			
Nessen	6-26-1	3	490
White Eagle:			
Baylor	6-26-1	1	30
Robbins	20-28-1	1	115
Total		88	37,079

Butler County

National Refining Co.'s No. 1 Guinn, SW cor. NW NW, Section 2-25-5, is spudding. Leonard Petroleum Co.'s No. 6 Kinney, SW cor. NE SW SE, Section 29-26-5, is drilling at 700 feet. Empire Oil & Refining Co. made location for No. 1 Nixon, SW cor. SE SE, Section 15-27-5. Location was also made for No. 10 Cranston, SW cor. SE SE, Section 22-27-5.

Empire Oil & Refining Co.'s No. 1-C Marshall, NE cor. SW SW, Section 11-27-5, is dry and abandoned at 2,784 feet. No. 8 Cranston, NW cor. NE SE, Section 22-27-5, has been completed for 150 bbls. in sand at 2,732-69 feet.

Coffey County

Cross and others' No. 1 Drapes, NW cor. NE, Section 17-23-14, is a dry hole at 1,755 feet.

Cowley County

Rider and others moved a machine to the location for No. 1 Franks, NE cor. NW NW, Section 30-31-5. Washoma Oil & Gas Co. and others' No. 1 Hedrick, SE cor. SW NE, Section 16-32-4, has been abandoned at 3,314 feet.

Dickinson County

Cress and others moved the rig in for No. 1 Menli, NE cor. Section 12-15-2.

Ellis County

Davis and others' No. 3 Weiland, SE cor. NE NE, Section 1-13-16w, is a rig on the ground.

Greenwood County

Gordon & Stats made location for No. 1 Blakely, SW cor. NE, Section 3-22-11. Empire Oil & Refining Co. is erecting the rig for No. 2-A Norton, NE cor. NW NE, Section 22-22-12. No. 2-B Edwards, NW cor. SE SE, Section 21-23-11, is a rig under construction. The Texas Company's location has been made for No. 6-C Edwards, NE cor. SW SE, Section 21-23-11.

Empire Oil & Refining Co.'s No. 1 Holderman, SE cor. SW, Section 15-22-12, has been completed for 50 bbls. in sand at 1,717-32 feet. Shell Petroleum Corp.'s No. 1 Pees, NE cor. NW, Section 22-22-12, made a 10-bbl. well in sand at 1,710-17 feet. Independent Oil & Gas Co.'s No. 3 Raee, NE cor. NW SE, Section 19-23-10, is dry and abandoned at 2,315 feet. White Oil Co.'s No. 8 Graham, CSL SE NW, Section 35-25-10, was completed for 70 bbls. in sand at 1,966-98 feet.

Lyon County

Stats & Spencer's No. 1 Milner, SW cor. Section 33-21-11, is dry and abandoned at 2,055 feet.

Marion County

Tidal Oil Co. is moving the rig in for No. 2 Ewert, NE cor. SW SW, Section 7-19-3.

Morris County

General Utilities Co.'s No. 1 Midcalf, SW cor. SE NE, Section 15-16-7, has been completed for 500,000 feet of gas in sand at 487-92 feet.

Osborne County

Empire Oil & Refining Co.'s No. 1 Christ, SE cor. NE, Section 30-9-14w, is dry and abandoned at 3,775 feet.

Russell County

The Texas Company is building the rig for No. 2 Leonard, SW cor. NW NW, Section 6-13-15w.

Sedgwick County

Bu-Vi-Bar Petroleum Corp. is building the rig for No. 2 Reed, NW cor. SE SE, Section 1-26-1w. The rig is up for No. 3 Reed, SW cor. SE SE, Section 1-26-1w. Skelly Oil Co. and Davis made location for No. 10 Wilson, NW cor. SW NE, Section 1-26-1w. Wentz Oil Corp. made location for No. 2 Sam Bright, SE cor. NW, Section 1-26-1w. No. 3 Sam Bright, NE cor. SE NW, Section 1-26-1w, is also a location. Lario Oil & Gas Co. has the rig on the ground for No. 1 Calins, SW cor. SE, Section 7-27-2.

Bu-Vi-Bar Petroleum Corp.'s No. 3 Carr, SE cor. NE SE, Section 1-26-1w, Valley Center Pool, has been completed for 1,366 bbls. in sand at 3,364-71 feet. No. 4 Carr, NE cor. NW SE, Section 1-26-1w, made 1,005 bbls. in sand at 3,350-61 feet. Skelly Oil Co. and Davis' No. 8 Wilson, SE cor. SW NE, Section 1-26-1w, was completed for 1,250 bbls. in sand at 3,367-72 feet.

Bu-Vi-Bar Petroleum Corp.'s No. 2 Bright "A," NE cor. SW SE NW, Section 6-26-1, is dry and abandoned at 3,511 feet. No. 5 T. Goodrich, NE cor. SW, Section 6-26-1, has been abandoned at 3,426 feet. Derby Oil Co.'s No. 4 Gorman, NW cor. SW NW SW, Section 6-26-1, made 625 bbls. in sand at 3,362-67 feet. Tidal Oil Co.'s No. 3 Scherger, SW cor. NW, Section 6-26-1, was completed for 240 bbls. in sand at 3,367-71 feet.

Bu-Vi-Bar Petroleum Corp. and others' No. 2 Rothfuss, NW cor. NE NW NE, Section 7-26-1, made 71 bbls. in sand at 3,388-91 feet. Shawnee Oil Co.'s No. 1 Newman, SE cor. SW NW, Section 5-26-2, is dry and abandoned at 3,047 feet. Gypsy Oil Co.'s No. 2 Hamant, NW cor. SW, Section 14-26-2, was completed for 1,335 bbls. in sand at 3,234-37 feet. Shell Petroleum Corp.'s No. 1 Fischer, NE cor. SE, Section 15-26-2, made 784 bbls. in sand at 3,199-3,203 feet. White Eagle Oil & Refining Co.'s No. 1 Robbins, NE cor. SE, Section 20-28-1, was completed for 160 bbls. in sand at 3,092-3,111 feet.

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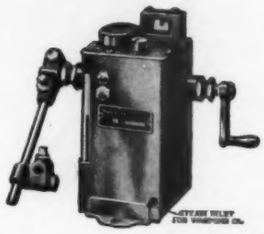

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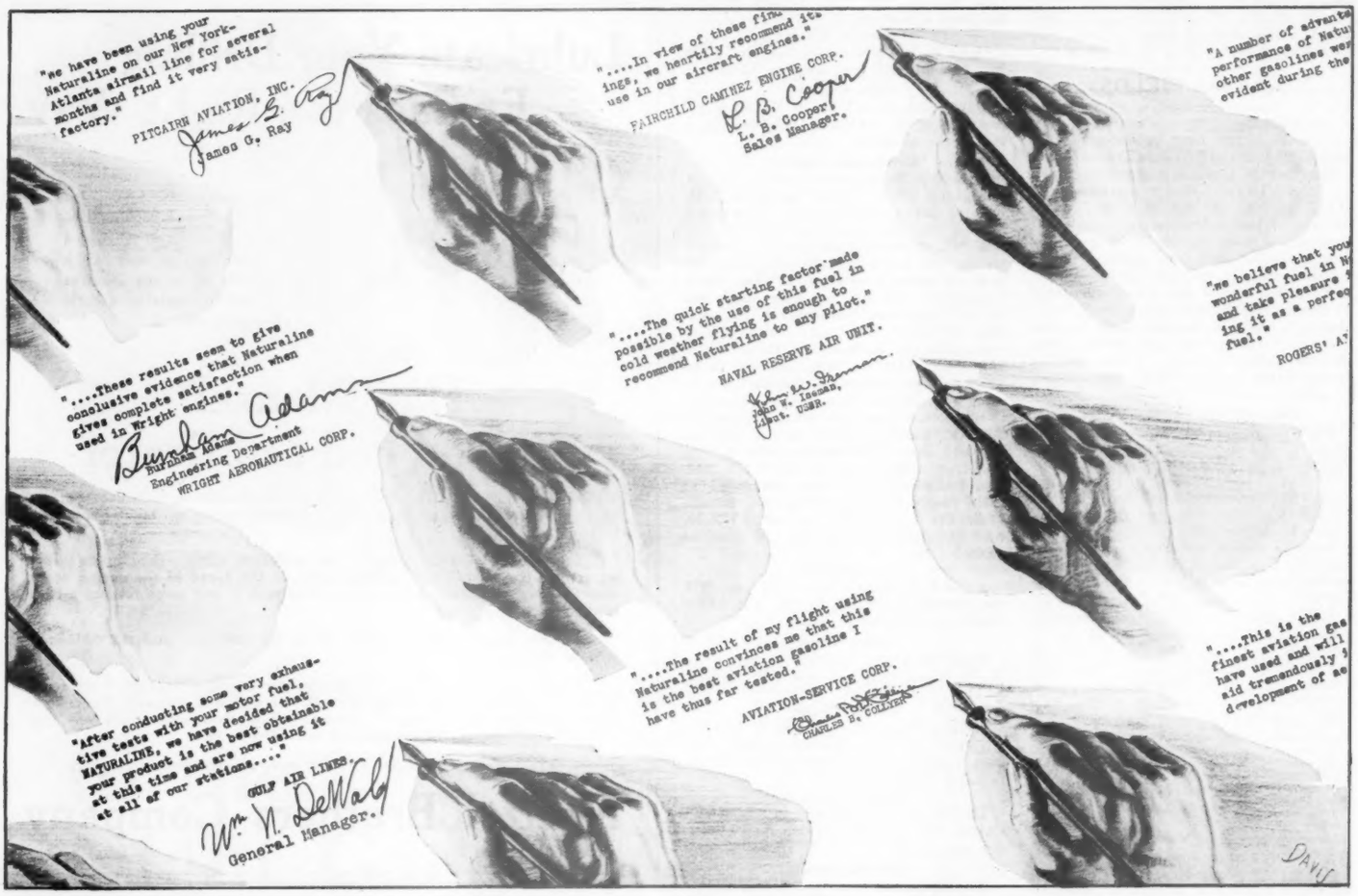
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James G. Ray
"....In view of these findings, we heartily recommend its use in our aircraft engines."
FAIRCHILD CAMINEZ ENGINE CORP.
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L. B. Cooper
Sales Manager.
"....These results seem to give conclusive evidence that Naturaline gives complete satisfaction when used in Wright engines."
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Lieut. USNR.
"....The result of my flight using Naturaline convinces me that this is the best aviation gasoline I have thus far tested."
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"After conducting some very exhaustive tests with your motor fuel, NATURALINE, we have decided that your product is the best obtainable at this time and are now using it at all of our stations...."
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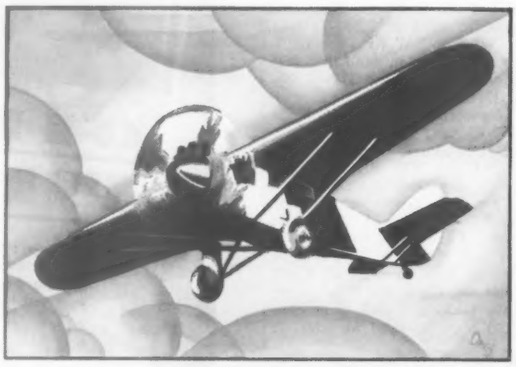
Many of the best known pilots in the country have tested Naturaline and endorsed it with enthusiastic testimonies.

The jobber who handles Naturaline has plenty of expert opinion back of him. He need not fear competition. In the strictest sense, Naturaline has no competitor. Naturaline is made from 100% natural gasoline, and other aviation fuels made from crude oil are not comparable.



Naturaline is balanced, uniform, quick-starting, smooth in power output, non-corrosive, anti-knock, fuel saving and light in weight.

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Tulsa, Oklahoma

NATURALINE

THE SUPER AVIATION MOTOR FUEL

Product of
Naturaline Co. of America
Chestnut & Smith Bldg.
Tulsa, Okla.

Practical Suggestions in Refining

By W. T. Ziegenhain

Hydrogenation of Fuel Oil Placed on Commercial Scale

Will some refiners 10 years hence show a yield of 102 to 105 per cent gasoline per barrel of crude run? Under present practices of skimming and cracking the residue, this is, of course, impossible but it is entirely possible the work recently announced as being carried on in the Baton Rouge plant of the Standard Oil Co. of New Jersey, of hydrogenating the residues will lead to the perfection of a process that will accomplish this. Similarly, it was considered unlikely a yield of 70 per cent gasoline, from the average crude would be realized when the story of cracking was first told. The hydrogenation of oil combines the principles and reactions of cracking along with the hydrogenation and recombining of the simple radicles. The basis for the work has been the hydrogenation of coal as carried out by the Bergius process. Most of the development work was done in Germany since coal is the most plentiful and the logical raw material for the manufacture of motor fuels. But, with coal considered as carbon, and since it was possible to add hydrogen atoms to this carbon atom to produce complex molecules having the properties of motor fuel, it appeared logical to the chemical engineers of the Standard Oil Co. of New Jersey, the same principle may be applied in the case of oil. Instead of starting with carbon, however, crude oil, or fuel oil must be taken as a basis in which case there is already a series of combinations of carbon and hydrogen. The problem here is to first break down the complex carbon and hydrogen combination into simpler combinations to which hydrogen may be added and then recombining these simple radicles under controlled conditions to make the desired product. Such a gasoline is truly a synthetic gasoline in much the same manner as synthesized rubber, indigo, turpentine, etc. In the case of the classical work done in the synthesis of indigo a product was made from naphthalene, as a basis, which could be sold much below the cost of recovering the material from the indigo plant and in turn opened up an almost unlimited supply. In a much more important manner, this work may lead to the true and complete conservation of natural resources from a manufacturing standpoint since conditions were so arranged that only the most valuable and desirable product is made.

High Pressure Used

However, the process calls for pressures and temperatures much above those used in any refining process now and off hand the layman may term the new idea as impracticable. Pressures up to 300 atmospheres or 4,500 pounds per square inch are involved. In the process, cracking is brought about at the elevated temperatures to produce a series of simple hydrocarbons, some of which are unstable and tend to recombine. Under these conditions of high temperatures and in the presence of a catalyst, dissociation of the compounds makes it possible to induce a reaction between the elementary components and free hydrogen introduced into the system to form the stabilized and more complex hydrocarbons. Under specified conditions of temperature and pressure, the reaction may be carried on to produce a motor fuel or under other conditions it is possible to prepare more complex hydrocarbons of the kerosene class, etc. But since gasoline is the most valuable, the work has been carried on with the idea of shaping conditions to make a maximum volume of gasoline.

A semicommercial plant is now being operated at the Standard Oil Co.'s plant

(Continued on Page 143)

LABORATORY EVALUATION OF CRUDE OIL SAMPLE INVOLVES MANY TESTS

As new producing fields are developed, the network of pipe lines is extended and refineries are located at strategic points with respect to water transportation there is a growing need for some standard method of evaluating all of the different crudes made available for refining. Each refiner has his own method of evaluation and some of these are very complete and fully answers all of the questions that would generally arise regarding the probable cost of refining that particular crude and the quality of the products to be made from it, but there are many refiners who rely too much on a few tests as a basis for the evaluation of the crude offered them for refining.

The physical characteristics of the crude are important and the results of these tests should include the following:

Well or field location.
Source of sample.
Gravity.
Pour point.
Per cent sulphur.
Viscosity Saybolt at 70 degrees Fahrenheit.
Color.
Per cent b.s. and water.

The location of the well or field gives a general idea of the quality of the crude and this together with the gravity will enable one to determine the posted price on the crude if it is listed among the price postings in the various fields. The source of the sample, should tell whether the sample was taken from the pipe line or from storage oil that has weathered. The pour point of the crude is some times an important factor in judging the difficulty of pumping the oil. Similarly, the viscosity of the oil at 100 degrees Fahrenheit gives a general idea of the ease with which the oil may be handled in the pipe lines. If the pour point is below zero it might be shown as "Below zero" instead of actually determining the pour point for difficulty in handling the oil seldom occurs when it is above zero. It must be remembered that a crude that has a pour point of zero does not mean the oil will solidify in the pipe lines when being pumped, for oil in motion solidifies at very much lower temperature than when tested by the ordinary procedure of taking the pour point. The balance of the tests are laboratory determinations intended to help indicate the refining value of the crude. These include its color, whether green, brown or black. A green crude might indicate that steam refined cylinder stock may be made from it. A brown or black crude would indicate the residue from the topping operation would only be fit for cracking or as fuel oil. A more accurate method of indicating the probable cylinder stock value of a crude is to determine its iodine color number.

The per cent b.s. is not so important since it may vary greatly and must be brought down to 1 or 2 per cent to meet the standard requirements but the test is easily taken and influences the yield value slightly. If the b.s. and water is high this might account for a high loss during distillation due to the evaporation of the water or it may account for the poor quality of the fuel oil or cylinder stock.

Distillation of Sample

The next important step in evaluating the crude is to run a distillation of a sample of the crude. Most refiners run from 10 to 50 gallons of the crude in a small shell still equipped with a suitable tower. The efficiency of this distillation unit is usually different than that of the plant. The laboratory yields are often higher than those of the refinery. Whether higher or lower this factor of difference may be quickly determined. For instance, if the laboratory tests consistently show a yield of 35 per cent U. S. Motor gasoline from a given crude from which the plant yield is only 32 per cent, there is a correction factor of approximately 10 per cent to be applied in evaluating on other crudes tested for running in the plant. Incidently, this difference may also indicate there is ineffective fractionation in the plant equipment that might be remedied without sacrificing throughput. The Hemple distillation as outlined by the Bureau of Standards is probably the most used procedure followed in making these distillation tests. The yield of gasoline is usually taken as the per cent of gasoline of a quality whereby 90 per cent distills over at 392 degrees Fahrenheit by the ordinary A.S.T.M. distillation procedure.

In subsequent cuts the yields of the respective products are tabulated under the following headings:

Per cent gasoline (90 per cent over at 392 degrees Fahrenheit).
Per cent kerosene (165 degrees flash).
Per cent gas oil.
Per cent fuel oil (show gravity).
Per cent loss.

If the crude is suitable for the manufacture of cylinder stock and the plant is equipped to make lubricating oils the above list may be revised to include the following:

Per cent gasoline (90 per cent over at 392 degrees Fahrenheit).
Per cent kerosene (165 degrees flash).
Per cent gas oil.
Per cent cracked wax distillate (show gravity and pour point).
Per cent fuel oil.
Per cent cylinder stock (600 degrees fire).
Per cent loss.

The yield of cracked wax distillate, with the gravity and pour point given, will permit the operator to estimate fairly accurately the viscous lub content and the wax content of the crude when refined but a more complete report might include the laboratory determination of the per cent yield from the cracked wax distillate showing the breakup into gas oil, 110 viscosity lub and 220 viscosity lub. These figures indicate the approximate yield of the finished 100 viscosity and the 200 viscosity oils, the difference in the viscosity being accounted for by the lowering of the viscosity during treating and filtering. The wax content of the cracked wax distillate is difficult to determine accurately for the laboratory procedure may lead to very different results than when the crude is processed on a large scale. It is almost necessary to estimate the yield from the pour point and the behavior of the cracked wax distillate when it is chilled to effect the separation of the wax and oil in determining the lub yield.

Quality of Product

The quality of the products is the next most important factor in the evaluation of the crude and this factor is become more and more important. The many characteristics in gasoline, recognized as selling points or as disadvantages from a marketing standpoint, act to influence the value of the crude. For this reason the following tests should be made and recorded on the sample of gasoline made from the initial distillation of the crude.

Complete A.S.T.M. distillation.
Per cent sulphur.
Antiknock value (recorded as benzol equivalent or as number of c.c. tetraethyl lead needed to bring to given standard).
Per cent of AA natural gasoline needed to bring volatility up to pass U. S. Motor distillation specifications.
Color stability. (Note color before and after exposing sample of gasoline to direct sunlight for three hours. Note average atmospheric temperature during test and show time of day.)

The distillation will give a general idea of the quality of the gasoline from the standpoint of its volatility and will serve as a guide in estimating the yield of a 375 endpoint gasoline or some other grade. In those refining centers where the use of natural gasoline is an expense, such as when the plant is obligated to pay a high freight rate, etc., it is important to show the per cent of AA natural gasoline needed to blend with the refinery gasoline to bring it up to a marketable volatility. If it requires several times as much natural gasoline to blend up one gasoline than another, the additional cost involved must be recognized, particularly if it is known, the addition of the natural gasoline does not have some beneficial effect in the quality of the blend.

With gasolines being classified as ordinary motor fuel and as antiknock motor fuel, and with premiums of 1 to 3 cents paid for the antiknock gasolines, one which has a high natural antiknock rating should be given preference over one which has a relatively poor rating. For this reason the benzol equivalent or the c.c. of tetraethyl lead is called for in the above tabulation.

Quality of Kerosene

In showing the quality of the kerosene about all that need be shown is the result of a burning test of say 16 hours' duration. The condition of the wick and the height of the flame at the end of the specified period gives a fair indication of the marketability of the oil.

The gas oil should be tested to determine its gravity, per cent sulphur and its pour point. These are essential if it is to be used as a cracking stock but if

(Continued on Page 143)

Recent Patents

1,714,453. Oil Cracking Process. Alfred Schwarz, Upper Montclair, N. J., assignor to Coal & Oil Products Corp., a Corporation of Delaware. Filed March 25, 1925. Serial No. 18,076. 3 Claims. (Cl. 196—56.)

2. The process which comprises heating a mass of carbonaceous material to an oil cracking temperature thereby producing waste gases, utilizing said waste gases to heat a body of oil to a distilling temperature, removing vapors from said body of oil, introducing unvaporized oil from said body into said mass of carbonaceous material to effect vaporization thereof, passing the resultant vapors downwardly through zones of increasing temperature to crack the same, fractionating the resultant vapors and gases, and conducting heavier condensed fractions to said body of oil for retreatment.

1,678,328. Temperature Controller for Oil-Separating Towers. Richard H. Carr and Cornelius B. Watson, Columbus, Ohio, assignors to the Pure Oil Co., Chicago, Ill., a corporation of Ohio. Filed April 13, 1926. Serial No. 101,790. 7 Claims. (Cl. 196—141.)

3. The combination with a separating tower, of a preheater in said tower, inlet and outlet connections admitting of the circulation of oil stock through said preheater, a by-pass connection for shunting the oil stock circulation from said preheater, and automatic means responsive to the internal temperatures of said tower for controlling the oil stock flow through said by-pass.

(Additional Patents on Page 186)

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MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

WILL BUY PRODUCTION

Will buy good production immediately if priced right. Give full information first letter, including amount of daily production, gravity, acreage, plat of property showing location of wells and surrounding wells, pipe line buying oil, price of oil, legal numbers of land, equipment, price wanted, etc. Box C-944, The Oil and Gas Journal, Tulsa, Okla.

WINKLER COUNTY, TEXAS—Will sell interest in drilling well and 80-acre lease. Located NE cor. Sec. 2, Blk. B-5, southeast of the Bashara gas well. Contract for 3,500 feet or pay. Already financed. Cooper, 1,609 W. Page St., Dallas, Tex.

LEA COUNTY, New Mexico's biggest Oil Play. 40 acre lease $50.00. Chaves County, 40 acres $25.00. Monarch Inv. Co., Roswell, N. M.

15,000 ACRES of best oil and gas lands in Kentucky and Tennessee selected by geologists on the best producing structure in those states and close to pipe line. Long term leases, very low rental. Will sell all or any part or will join others in developing same. Dr. W. D. Mixson, Waycross, Georgia.

KANSAS SHALE GAS

Acreage in new shale gas field, for sale or drilling contract. Also chance for Bartlesville oil. Active play. Depths to shale gas from 250 to 400 feet depending on structure and topography. Bartlesville about 200 feet deeper. Pipe line markets. Box 52, Chanute, Kansas.

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WANTED

From forty (40) to eighty (80) acres in proven territory for immediate development. Worthen Petroleum Co., 305 Oklahoma Sav. & Loan Bldg., Oklahoma City, Okla. Telephone 2-3666.

SHALE GAS PROPERTY FOR SALE

560 acres and 3 producing wells. Steady pipe line market. Will sell an interest for further development or will sell entire property. Box 52, Chanute, Kans.

FINLAY DOME district, Hudspeth County, Texas, looks good. Map and lease prices $1.00 cash.

G. D. BATEN,
BOX 1591, EL PASO, TEXAS.

A REAL OIL GAMBLE

1,000 ACRES leases virgin territory. In line 5 miles each way to 2 big gas fields. An oil seepage on lease of long years standing. When agitated does not break up. Located about 6 miles from Ashland, Ohio. Will sell part or all of leases. Inquire of James Tallon, Cottage St., Ashland, Ohio.

WANTED TO BUY 200 to 500 barrels daily production, with proven locations to drill. Deal only with principals. No brokers.

MID-TEXAS PETROLEUM CO.
321 Braniff Bldg.
Oklahoma City, Okla.

FOR SALE—SW ¼ sec. 1, tws. 20, R. 5 W. near Douglas, Garfield Co., Okla. Good improvements, also nearly new 4 room modern house, 702 N. Main, Tonkawa, Kay Co., Okla. Mail all sealed bids to Cora Apple, Douglas, Okla.

7,000 ACRES for lease in Washington County. Lease located 3 miles South Sun Oil Field. About 18 miles Northwest of Bellville Oil Field. About 10 miles West of Wesley Oil Field, between 3 big oil fields. This almost proven oil territory. Many derricks up and drilling all over the county. A wonderful opportunity. M. E. Fisher, Brenham, Texas.

LOOK—640 acres of land in eastern Wyoming with prospect for oil. For sale or lease. Ernest Habegger, California, Mo.

FEE OWNER will sell lease NW Section 7-12-2e on Lincoln-Oklahoma line on topographical high. Major companies have adjoining leases. Also lease NW Section 19-11-3w, about 5 miles of big Oklahoma City well. No encumbrances. G. A. Minnich, Carroll, Iowa.

LEASES—PRODUCTION

FOR SALE 15/16ths mineral right on 365 acres joining major Co. lease, also cheap royalties and leases, write to 527 Hicks Building, San Antonio, Tex.

ROYALTIES AND LEASES,
BOUGHT AND SOLD.

25 years experience in the Mid-Continent oil fields. E. J. Davied, Fort Stockton, Texas.

LANDS, Leases, Royalties and drilling blocks in proven or unproven territories, Winkler, Pecos, Ward, Loving, Reeves, Culberson and adjoining Counties. Wire or Write.

H. F. Anthony, Anthony Bldg.,
Pecos, Texas.

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas

WINKLER, PECOS, WARD, Loving and Reeves Counties. Leases and Royalties. Hemby & Anderson, Box 633, Pecos, Texas.

HAVE 3,000 acres Woodard Co., Okla., joining land leased and owned by major companies. Big play here with Prairie, Bu Vi Bar and Sinclair drilling deep tests. Opportune time for right party to drill test or will take cash consideration on both lease and royalty. Mrs. J. M. Hale, Waynoka, Okla.

GETTING READY to drill on proven lease, Bixby Field, Oklahoma. Want a few parties with $500 or more to invest to join me. This lease selected on knowledge gained through actual operations this locality. Address Happy Sparks, 201 Hotel Brady, Tulsa, Okla.

LANDS, LEASES and ROYALTY BARGAINS in Ector, Winkler, Reeves, Pecos and other western counties. C. H. C. Anderson, Linz Bldg., Dallas, Tex.

DRILLING blocks, leases, royalties in Ellis, Trego, Rooks, Norton Counties. Write or wire W. J. Madden, Hays, Kansas.

8 BBLS. production Section 31-17-12. Bargain if taken at once. For particulars write Box 116, Mounds, Okla., or phone Mr. Archer. 6920, Tulsa.

BROKERS—Price of crude going up and so is price of oil leases. Have one hundred thousand acres of oil leases and royalties to select from in fifteen different counties in Texas at cheap prices. Buy now before they advance. Write me your wants. Scout, P. O. Box 200, San Antonio, Texas.

WANT TO SELL one-half interest in five blocks of acreage in Wichita Falls district with a well completed on each block. Good subsurface geology for total consideration $25,000.00.

H. B. DUDLEY
704 Hamilton Building
Wichita Falls, Texas.

OWN IN FEE with all oil rights 376,000 acres in Mexico, 50 miles north of Torreon and southeast of El Paso, Texas. Sacrifice $2.00 per acre, $50,000 cash, $50,000 six months and balance spread over a period of 5 years. 90% level land. Excellent oil possibilities. Have log of water well drilled to 440 feet struck oil. Have complete geological report by Jose G. Aguilera, founder Geologists Institute of Mexico City, Mexican-American Land & Colonization Company, 3212 Wilshire Boulevard, Los Angeles, California. Drexel 0292.

FOR SALE—Leases, Oil Production, Asphalt, Limestone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

FOR SALE. Close in acreage to well. To start by July 26. Structural high. Rice County, Kansas, also checkerboarded acreage. G. W. Moore, Independence, Kans.

GRAY CO., TEXAS, lease in proven territory, SE 20 acres of N½ of Sec. 1, B.&B. Apply to E. Key, Marshall, Tex.

BROKERS: Western Oklahoma leases, drilling blocks, royalties. Joe P. Crawford, Oklahoma City, Okla.

FOR SALE—5 acres close in oil land gas lease south part sec. 12, bl. B-72, Winkler County, Texas, $750 an acre. Box C-991, The Oil and Gas Journal, Tulsa, Okla.

LEASES—PRODUCTION

$12.50 BUYS acre in large oil lease pool, discovery well drilled, substantially proven. 503 S. Station, Springfield, Mo.

LEASES and royalties, Caddo, Blaine and adjoining counties. Write for complete list. A. E. Baldwin, Anadarko, Okla.

SETTLED PRODUCTION

46 Barrels net with prospects of materially increasing.

WAGONER COUNTY, OKLAHOMA.

340 acres with more locations in same sand now producing.

Deeper sand possibilities.

Gasoline plant making 450 gallons daily, run in connection with production.

Further information furnished upon request.

NO BROKERS
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Tulsa, Okla.

7,320 acres solid block at $3.50 per acre on patented basis. Located in northeastern Hudspeth County, Texas. Perfect title. Robert L. Dorbandt, El Paso, Texas.

2,840 ACRES blocked for well to commence on or before Nov. 10, 1929; located about 10 miles from Pampa, Gray County, Texas. $1.00 acre cash bonus and 80 acres retained for protection. Good geology, guaranteed title, abstract furnished for examination. H. Meers, Schneider Hotel, Pampa, Texas.

GIVEN FREE well located leases in Linn or Coffey Counties, Kansas, for the drilling of a well, shallow drilling; three sands; good markets for the oil and gas. H. W. Mitchell, Parker, Kans.

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TERRELL COUNTY, Texas, 2,560 acres. Drilling close by and looking good. Will lease 160 acres up at $2.50 per acre. L. C. Black, 124 Hearne Ave., San Antonio, Texas.

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460 preferred acres out of 1,840 acre Atherly Permit. ¾ Mile from best well in field. Now drilling on three sides. All good inside acreage. 1 gas sand. 3 proven large oil sands. No dry hole in field. Wells from 500 to 1,500 daily in top sand. Reliable operators only. Write or wire to Hand, Landfair & Rodgers, Basin, Wyo.

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In Roosevelt County surrounded by various companies all 10 year lease and 50c rental. 9 years yet to run and rental paid until July, 1930.

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160 acre leases $250.00
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WORLD'S BIGGEST Oil Companies playing Lea County, New Mexico, for millions. FOR SALE—Perpetual deeded oil royalty. Small investors take a chance for huge profits; play with the Big Boys, they make money. Write Monarch Inv. Co., Roswell, N. M.

NEW MEXICO OIL LEASES

I have 5,000 acres scattered through Townships 23-24 and 25 South, Ranges 17-18 and 19 East in Otero County at very low prices. Rental only 5 cents. For particulars, address

FRANK STRICKLAND
Sapulpa, Okla.

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YATES POOL ROYALTY

WILL sell 1 acre or more Sections 10 and 19, Blk. 194, Pecos County at $250.00 per acre. Glen Myers, San Angelo, Texas.

PARTICIPATING ROYALTY. 10 to 40 acres. Your share of lease bonus will probably exceed cost of royalty. Full data Box C-978, The Oil and Gas Journal, Tulsa, Okla.

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127 N. Dearborn, Chicago, Illinois
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ROYALTIES, oil leases, drilling blocks, lands in fee, title requirements secured. Good references of long standing. D. J. Perry, Edmond, Okla.

SEDGWICK, Harvey County, Kansas, Royalties on core drilled blocks, offsetting drilling wells and locations, also Ness County leases and royalties. James R. Haynes, Grantville, Kansas.

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DELAWARE incorporator. Charters, fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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BUY OR RENT USED PIPE
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15,000′— 5⅝″ Casing.
10,000′— 6⅝″ Casing.
5,000′— 8¼″ Casing.
5,000′—10″ Casing.
1,000′—12½″ Casing.
1,000′—15½″ Casing.
We will rent this casing or any other pipe which you may need. Let us finance your operations by carrying your pipe and casing investment for you.
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Holmes Building,
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REAL BARGAINS IN
USED EQUIPMENT
BRIQUETTING PRESSES
2—30 Ton per hour Komareck Units complete with mixers and motors.
1—15 Ton per hour Komareck Unit.
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STEEL TANKS
4—19′ dia. by 12′6″ high, 25,000 gallon.
6—19′ dia. by 10′ high, 20,000 gallon.
1—20′ dia. by 12′ high, 25,000 gallon.
4—22,000 gallon Parkersburg, bolted.
3—43,000 gallon Parkersburg, bolted.
1—85,000 gallon Parkersburg, bolted.
A large stock of smaller sizes in both pressure and open tanks. Write for list.
STILLS
1—Benzol Stripping Column.
1—Crude Steam Still with Column.
4—Direct Fire Tar Stills.
1—Steam Tar Still.
STEAM PUMPS
Large stock steam pumps, simplex and duplex, for tank and general service. Write for list.
VALVES AND FITTINGS
Large stock standard and extra heavy cast iron valves and fittings. Write for list.
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CORPORATION
OLD HICKORY, TENNESSEE

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PRICED RIGHT
50 MILES 4″ O.D. PLAIN END PIPE
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Mystery Why Jobbers Are Not Buying. Some Drawing on Their Reserves. Little Inquiry for Gasoline Over July

By J. B. Waldo

CHICAGO, Ill., June 24.—All of the large distributors whose stations cover all or parts of several states and the smaller jobbers whose business is not so extended have stated with almost no exceptions that they are now having the largest gallonage that they have ever had. What mystifies the trade here is why the jobbers are not buying. We have had ideal weather for more than a week. The consumption of gasoline has been very large yet jobber after jobber when asked for orders has replied that his supply was ample for a while, some say two weeks, some a month, but none is a spot buyer for immediate shipment. Of course, there are a few orders but the bulk is small and these orders are going to the makers of low prices. Major refiners began the week with the same quotation for U. S. Motor gasoline as last week, 9¼ cents. One refiner whose price is usually in line with that of the majors was quoting 9 cents, but sales were being made at 8½ to 8⅝ cents and material was being offered direct to the jobbers by refiners and Tulsa brokers at 8¼ cents and West Texas material at 8 cents.

Low prices undoubtedly do land the orders that are being placed but they are not increasing the amount of present purchasing by the jobbing trade. In fact, some of the jobbers have canceled the orders placed earlier in the month at the higher price which was the market at that time and others are reducing their takings on contracts to the minimum. Some jobbers who had gasoline stored for the day of higher costs during the peak of the season are known to be drawing on these reserves as they believe that they will be able to buy as cheaply when they have sold their stored gasoline as they did when they bought it. This morning there was a little spot demand, possible a little more than a week ago but not much larger. The orders were for rush shipment and from the smaller dealers. There was a little inquiry for gasoline over July and some of the dealers asking for the price said they have offers of 8¼ cents Group 3 basis although they did not know the origin of the material. The new business placed was for U. S. Motor and antiknock gasoline, the higher tests being wholly neglected. Kerosene was quite active in the small way that is usual for that product at this time of the year.

The refinery market was not quite as firm. There was no change in quotations for furnace oil or for the heavy industrial fuel oils. The inquiries were not many and the market generally was sluggish. Clear, cool weather ruled for the week end with warmer weather later in the week. The sales offices here expect a more active market later this week, chiefly on account of July 4 and the closing of the public schools which will release many families for long or short touring trips.

Spot Market Slow

Last week the spot market on practically all products dragged. There was little spot business in any product from gasoline down to heavy fuel oils. There was plenty of contract shipping, emphasizing the condition previously noted of the great gain in the contract business. The spot buying of gasoline was light and it seemed impossible to interest jobbers in the purchase of supplies, even at prices which were really much lower than those at which the same gasoline could have been bought two weeks ago.

There was heavy buying by jobbers generally in this territory at the time of the tank wagon advances the last part of May and the first few days of June. Then followed two weeks of unfavorable gasoline weather and a large part of the expected consumption failed to materialize. The consequence was that jobbers had more gasoline than they needed. Not only did they fail to order additional quantities but in numerous cases they would not give shipping instructions on material already ordered.

Marketers who had bought for June delivery in this city found it impossible to induce the jobber to give them the word to make shipment and refiners who had the orders on their books were in the same position. The natural result was that the marketer sought to reduce his loss by trying to find another place to put the gasoline even at the same or a lower price than that at which he had bought it. Failing in this the real marketers settled with their refiners by standing some or all of the loss, and the refiner in his turn sought for a market for the unshipped gasoline.

Small Refiners Push Sales

Some of the smaller refiners began to push the sale of their gasoline here and to offer material reductions in price to accomplish their aim. What was asserted to be full grade U. S. Motor gasoline was offered at 8¾ cents, Group 3, and it declined until for several days of last week, the representative in this city of a Tulsa broker offered what he said was U. S. Motor gasoline from Oklahoma refineries at 8 cents plus the usual buying charge of $5 per car. And even at this bargain price it was hard to find a buyer for the cars in transit to say nothing of cars to be shipped.

Investigation was made by at least two of the major organizations with headquarters in this city of the quantity of gasoline that was seeking an immediate sale in Oklahoma and Kansas and their reports made entirely independently, tallied. The quantity of gasoline that was being pressed for a buyer was found to be in both cases less than 100 cars and in fact about 75 cars all told. Some consideration was given to purchasing this material just to take it off the market, but few supporters of the plan were found, largely for the reason that the quantity was so small that it could do little if any permanent damage and it was felt to be just as well to let the refiners and those who had purchased but could not take out the material work out their own plan. It may prove a valuable lesson.

Not a Bargain

The few who were in position to avail themselves of the low-priced gasoline received no bargain, for the cost of the gasoline even at 8½ cents Group 3 would be a cent or more higher in cost than the gasoline received on the present contracts. The cost of gasoline bought at 8½ cents Group 3 laid down in Chicago with freight and inspection fees paid would be 11 cents. The cost of the same material on a 4-cent marginal contract with no split would be 9½ cents and while this difference in price would vary according to the freight costs, still the price of contract gasoline would be less than the cost of the same U. S. Motor gasoline purchased at 8½ cents Group 3 basis. There are other matters that enter into the question but the reason for the popularity of the present liberal contract is evident.

Many of the major local offices admitted last week that they were not getting any spot business at all. Most of them were not even trying to get any part of such spot business as was going. What was bothering some was the way in which good business was being taken by some of the local plants. One sales manager said that he bid on a 40-car order in Indiana and he had to bid 9¼ cents, but that it was taken by a refinery in the Chicago district at about 8½ cents Group 3 which he admitted was a good price for the Chicago plant considering the freight differentials.

Weather Encourages Motoring

The weather was ideal for motoring all of the week, with high temperatures, no rain and long, clear evenings. That the cars have been out in force is shown by the reports of the station men and the management of the large distributing companies. They are all doing a fine business not only in gasoline, but in motor oils which is an even better check on the use of the cars. As a rule a car owner buys his motor oils from his home station, but fills up on gasoline where he finds it necessary. It would not be surprising if the actual consumption made a greater gain over last June than did May of this year over May, 1928.

There was a gathering momentum in the volume of business on contracts at the close of last week and the feeling was general that this week would show a more active spot demand as well as a large movement on contracts. For one thing, the Forth of July holiday is always a time when motor cars are out in force and the consumption frequently sets the peak for any single day of the year. Then this week is the last week in June and the preparations for the month of July must be on a larger scale than for June. Some of the new sources of supply are not having the amount of output that was expected and it is noted by some that the West Texas plants are not doing as much business here as they have been.

Eastern Gasoline Bought

Some of the tank car dealers and some well-located jobbers are placing orders for Pennsylvania gasoline which by the way is stated to be refined from Venezuelan crude in part at least. Gasoline from Ohio is being bought for Detroit and some east Michigan points and a little of this eastern gasoline is being received in some parts of Indiana.

There has been some figuring on the part of some of the trade here that there might be some large shipments of California gasoline through the canal and back by way of the Atlantic ports far enough to have some influence on the local market but this thought was based rather on the excessive crude output of California than on refinery or marketing conditions. At present there seems to be no thought of such a movement in quantities.

The antiknock gasolines are having a good season. The trade believes that it is primarily due to the advertising given to these and the higher tests or qualities. Many motorists have never realized that there were actually different grades of gasoline except the comparatively few who changed from U. S. Motor to the high-test product at the coming of winter. Natural gasoline has been sluggish here and the prices have not changed.

Kerosene Movement Spotty

Kerosene has continued to move in a rather spotty fashion. There is always some local consumption and it seems that the jobbers in some part of the territory run out of kerosene at about the same time. There seems to be no other explanation of the erratic nature of the demand. The prices are unchanged but there was a little easier feeling last week and 5¾ cents was the usual price except by some refiners who were holding for 6 cents.

Distillates and other oils usually considered as furnace oils chiefly, low-flash and zero cold test gas and high-gravity fuel oils are in no immediate demand but the prospects of a good business next winter are considered excellent and many of the distributors and some refiners are preparing for a much larger demand next season than last. Prices for spot business are unchanged.

Gas oils, both the straightrun and the recycled are not freely offered and when offered by the Group 3 refiners are held at prices that do not seem attractive at present. What the purchasers consider a good straightrun gas oil with no objectionable features is being bought freely at 2¼ cents, Group 3 basis, out of Texas and some that is not as high in gravity but is otherwise a good gas oil at a little less, although the latter is about all sold for the present and early future.

The gas company demand is not large at present. The zero gas oils are being held for fall demand and generally quoted at 2½ cents or higher. The statement is freely made that the supply of gas oil suitable for furnace fuel is not likely to be much larger than a year ago and as the trade anticipates a larger demand, the result will be a stronger market in the near future, the refiners say. Some of the distributing organizations who cater to this business report that they have contracted for more oil this year with domestic consumers than a year ago and that there are many new installations yet to be cared for.

Demand for Fuel Oil Brisk

Industrial demand for fuel oil is large and the business is good but so largely on contracts that the spot sellers are finding business hard to get. The car loadings have increased again and general trade is good. The large steel companies have obtained enough new business to assure them an active third quarter for this year and generally the chief users of fuel oil in the industries are in position to use at least as much fuel oil for the next three months as they did during the second quarter of the year. The number of requests to delay or decrease deliveries is less than usual at this time of the year and an active summer with the important industries seems assured. The higher gravities with a low viscosity and low sulphur content are firmly held and in light supply at present many of the best sources of supply stating that they have nothing to offer.

The supply of fuel oils of the heavy type with a zero cold test offset by a high sulphur or high viscosity or both is large and while the offerings show no increase and are less out of West Texas, the supply is sufficient to prevent any advances in prices at present.

Fuel Oil at 45 Cents

One of the most widely sold fuel oils in this district is being sold to dealers at 45 cents again although the price has been advanced to 50 cents and again declined. There are no really important contracts known to be pending here. Requirements of the monthly buyers for July are being worked on at present.

Motor oils were quiet last week in a wholesale way but the jobbers and dealers are having an active demand from the consumers. Prices are higher for the best-known makes and the tendency is towards still higher values. A large advance business was done by both refiners and compounders and the distributors were generally supplied in advance of the increase in prices. When they do begin to replace their stocks they will find a firm market and not too abundant supplies.

Bright stocks are actually sold ahead with most refiners according to their local representatives. Some of the contracts which call for a certain number of cars are being delivered in the old-

(Continued on Page 143)

Expect Eastern Tank Wagon Advance

Refined Markets on Atlantic Coast Steady With Record Breaking Gasoline Consumption Anticipated

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, June 24.—Steadiness ruled in East Coast refined products markets this past week, with prices unchanged, but with an early advance in tank wagon prices expected. Cylinder stocks continue on an easy basis as far as demand went but with refiners maintaining quotations.

A record breaking consumption of gasoline this season is looked forward to by practically all of the leading factors acquainted with the situation. There was a slackening in export demand but various inquiries reported indicated that next week will see the consummation of a good volume of business.

How the sudden spurt of domestic business has eaten into the stocks at refineries is shown by the report for May, which reveals a decrease of 2,451,000 bbls. of 42 gallons each in refineries east of California. This summary, prepared by the American Petroleum Institute, covers approximately 85 per cent of the operating capacity in the territory covered.

Tank Wagon Gasoline

There have been no changes in tank wagon gasoline prices this week, but no secret is made of the fact that the large operators contemplate acting to revise prices upward within a few days. The unprecedented demand for gasoline will, at the present rate, soon cause jobbers to withdraw to the limit of their contracts, thus bringing them into the market again.

Many large jobbers covered themselves heavily during May at the lower quotations. They have been trying to hold down their withdrawals against those contracts during the past few weeks, but have been unable to do so.

It would not prove a great surprise if a 2 cent advance were to be made shortly in tank wagon gasoline in the Standard Oil of New Jersey's territory.

Tank Car Gasoline

The Standard Oil Co. of New Jersey continues to quote U. S. Motor in tank car lots at 10 cents a gallon, which price rules the market here. While it had been possible to secure gasoline in the jobbing market under this figure two weeks ago, this situation has changed abruptly and whatever variation of the present price might occur would probably be above it and not under it, it is claimed. As a matter of fact there is not a great deal of anxiety shown by sellers for business at the 10-cent figure.

A very close watch is being kept on retailing conditions throughout this territory and there has been a dearth of the sectional "price wars" which have marked the start of the summer season in past years.

California U. S. Motor is meeting with great popularity here and some gas stations are featuring the origin of this gas as a special inducement to the public to ask for the California product. A striking illustration of the rise in consumption here of the California product is shown by the fact that for the week ending June 15 there were 468,000 bbls. of California crude and refined oils received at Atlantic Coast ports, as compared with 257,000 for the previous week. And of this total 387,000 bbls. were of gasoline.

It is not unlikely that California U. S. Motor may take the lead in the price situation, bringing a slight premium because of its high power.

There has been little business written for July as yet. Some refiners are confining their sales, wherever feasible, to 10 days ahead, while others will book orders subject to the spot price at time of shipment. This latter plan does not appeal especially to jobbers at this time, as they are of the general opinion that prices will be higher as the summer wears on and that to take advantage of such a situation, of course, they must cover their future needs before such possible advances are made.

Interesting developments may come about next week when jobbers enter orders for July delivery, but it is felt that whatever changes may be made will be based on actual market conditions in consuming channels.

Paraffin Wax

Markets are in a weaker condition this week, prices softening somewhat under persistent pressure from buyers for concessions. This condition, however, exists mostly in the call for the lower melting points. Refiners have been disposed to hold more firmly to their prices for the higher melting points.

Domestic buyers are believed to be well supplied and are evincing little interest, aside from attempting to secure forward shipments at present price concessions. This, however, they have been unable to accomplish. Refiners have been found who would grant slight concessions on spot business but would not listen to any committments for future delivery now. They are operating on the supposition that the market must firm up shortly and are willing to take their chances in declining this character of business.

The greatest call for forward deliveries at present levels comes from export operators, who can see a most advantageous situation arising if they could cover ahead. While able to win concessions on spots, like the domestic buyers, they have found it almost impossible to find any refiners who agree with them on their forward ideas.

Diesel Oil

Steadily increasing business, due mostly to greater demand from marine interests, brings this market to a firm condition this week with prices holding steadily at $2 to $2.10 per barrel in bulk at refineries. There were large withdrawals against contracts during the week, and considerable spot business placed. Refiners are most optimistic on the outlook in this product.

There has been a slight easing in low-grade Diesel for furnace oil use, the general price being around 4¼ cents per gallon, which represents a shading of about a quarter of a cent. This end of the business will, of course, undergo a seasonal slack through the summer months. This slack became noticeable almost simultaneously with the start of the heat spell which has kept this territory in shirt-sleeves during the past week.

Gas Oil

Good demand is reported for the past week, with the leading seller holding 32-36 gas oil firmly at 5½ cents per gallon. In other quarters the price is easier, running down to 4¾ cents. For the most part the gas oil on the local market is cracked stock. Refiners are holding to their plan of keeping the straightrun for their own use in crackers this summer. This action was decided upon when the strength in crude oil prices was reflected in firmer conditions in the uncracked product.

Artificial gas companies who have been holding off and working on reserve stocks while awaiting an expected easing in prices, have been forced to enter the market for replacement supplies, and this business has constituted a large part of the operations of the past week. They are not as yet stocking themselves heavily, as is their custom in the summer months, believing as they do that price recessions will come about shortly.

Industrial consumption of low-grade gas oil is about the only reason this product continues in any way active. The season can be called closed as far as private home consumption is concerned. To bring about a continuous demand for low-grade gas oil is one of the interesting problems facing the industry and the spread of consumption among industrial organizations is being watched with keen interest.

Charter Market

Intercoastal clean rates broke into new high ground this week in line with general advances on other commodities. The "Hadnot" is to take August gasoline from California to the United States Gulf at $1.05 a barrel. It is pointed out that a $1.05 rate to the Gulf does not necessarily imply $1.07½ or $1.10 to north of Cape Hatteras, but it is still $1.05 for Gulf discharge.

Fuel Oil

A continued steady market for bunker "C" fuel oil is reported in East Coast territory, with leading refiners maintaining the market firm at $1.05 per barrel, bulk, at terminals, and $1.10 per barrel barged alongside within the harbor limits. The principal movement, as is but natural at this season of the year, is against standing contracts with the large steamship companies, withdrawals against these orders running into substantial totals.

While stocks of heavy oil continue top-heavy in this section, it is expected that production totals will be held down over the summer months and that additions to storage will be curtailed as much as possible. It is indicated that refiners will use their cracking equipment extensively throughout the summer season, in the effort to obtain the maximum gasoline yield from their runs, and this will naturally make for a smaller outturn of the heavier ends.

Marketers report that heavy oil for use in oil-burning furnaces is running into substantial totals for this season of the year, and expect that consumption in this quarter will set new records this summer. This is due to the fact that most new office building and apartment construction involves the installation of oil-burning furnaces, which must be kept in operation throughout the summer to supply hot water.

Petrolatum

Sellers report a fairly brisk inquiry for the white grades, with the bulk of current production moving readily into consuming channels against standing orders. The market is well sustained as to price on both the amber and white grades.

Dark green has come in for slightly better buying by the export trade this week, and the market is well maintained at 2 cents per pound, in line with the firmness evident on other refined products. It is declared that petrolatum stocks held by refiners in East Coast territory are smaller at this time than they were a year ago, this applying to all grades.

Lubs

Quiet ruled the market in cylinder stocks this week, with an easy undertone but with refiners indisposed to grant too great concessions to secure business.

There have been no changes in the general run of prices, and, although there has been but a nominal volume of business consummated, it has been on a basis of 42 to 43 cents for 600 steam refined. The price of 635 steam refined is quoted at 44 to 45 cents, but a sale of fair volume was put through under the low figure. A firmer condition rules in 650 steam refined, which is being held at 49 to 50 cents with no concessions available in the general market.

Other prices which hold fairly steady are 600 Pennsylvania flash at 52 to 53 cents, 630 flash at 57 to 58 cents, 600 Warren "E" 44 to 45 cents, 600 Oil City "E" at 43 to 44 cents, bright stock, light 140-150 at 61 to 66 cents, and dark at 60 to 64 cents. It will be noted that a wide range on bright stocks persists in this market, because of different views at refineries.

The price situation in lubs is expected to tighten shortly, as there is no apparent reason for a weakening at this time. During May the refinery stocks decreased by 7,476,000 gallons. Continued consumption at this rate will mean a sudden upward turn which would catch many unprepared.

Seasonal activity only is noted in pale and red oils here during the week. It is true that there has been a slight increase in export demand, but the market in general is of a quiet nature with adequate stocks to meet the demand. Prices hold steady. Export demand mainly is traceable to shipments out of the Gulf, consisting of South-Texas and Mid-Continent refinery stock.

Kerosene

Business was done during the week on water white at 7¾ cents per gallon, tank car lots, as against the price of 8 cents which has been quoted for some time and which continues to be the general market price. The sale mentioned was for a good-sized volume. To secure the order a slight concession was demanded, and in view of the weak undertone which has prevailed in kerosene for some weeks past, this concession was not difficult to obtain. In some circles it was surprising that the buyer did not carry the price down to an even 7½ cents. The statistical position of kerosene is slightly weaker than during the past month. The American Petroleum Institute summary shows that stocks of kerosene in refineries east of California increased 63,000 bbls. during May.

There is no change in tank wagon kerosene markets which continued unchanged during the week, not being affected by the weaker tone in tank car sales.

Export Markets

Export demand for gasoline was stagnant this week, despite the strength of the market and the general feeling that prices are due for an upward turn. Leading foreign buyers who had been active in the market during the past month have apparently filled their needs for some time to come, and are not expected to become active in the near future, unless there should be unexpected market developments.

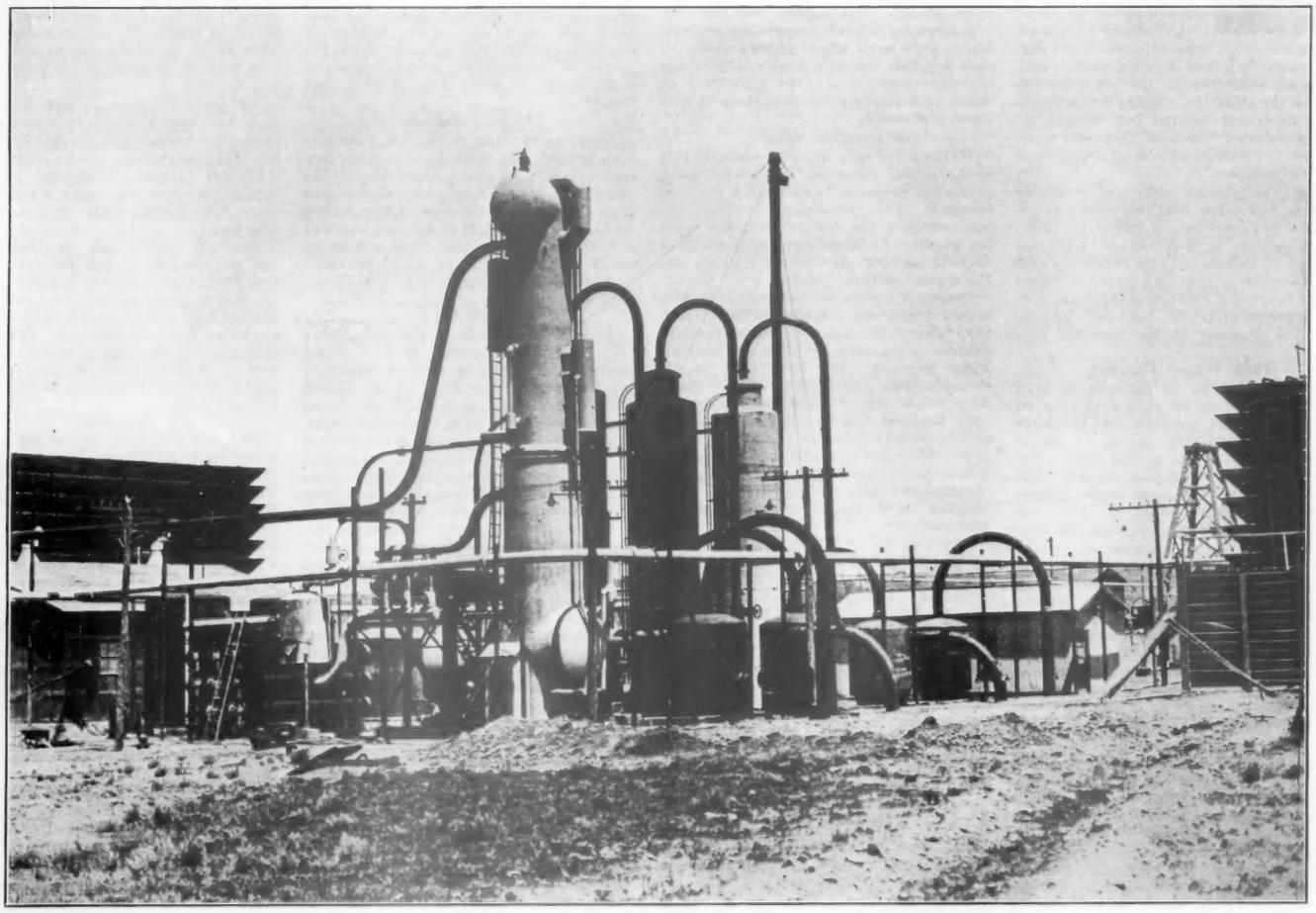
There have been a few casual inquiries for motor fuel for the Continent but nothing of a nature to indicate that any deals of importance could be expected as a result.

Kerosene is being taken only in small quantities, although prices are not weakening in the face of the lack of buying interest. There has been no demand for lub oil in export circles this week. The unusual uncertainty in the price situation is retarding sales of lubs, and until some definite basis is arrived at it is believed that export interests will continue to operate only when they can obtain concessions which make buying especially attractive.

Export demand for paraffin wax has been active only to the extent of seeking

(Continued on Page 143)

Ownership of an ERECO Absorption Plant is Evidence of Efficient Operation



An Ereco Absorption Plant in West Texas

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Natural Gasoline Manufacture

ORGANIZE CONSULTING AND LABORATORY FIRM

Dr. Walter J. Podbielniak and Paul M. Raigorodsky have recently formed a partnership to act as consulting engineers on the design and operation of natural gasoline plants and to organize an analytical and research laboratory for the analyses of gas, gasoline and absorption oils by fractional distillation and other tests. Mr. Raigorodsky is well known to the industry through his connections with the Newton process and the Engineering, Research and Equipment Co. Doctor Podbielniak is known through his development of successful methods of practical fractional distillation analyses for natural gas and gasoline and for his numerous articles on the practical application of such analysis to the design and control of gasoline plants. The offices of the partnership are located in the Philtower Building, Tulsa, and the laboratories on the twelfth floor of the Medical Arts Building.

The laboratories are being equipped with two Podbielniak double-unit apparatus for fractional distillation analysis of gas and gasoline samples, a Burrell Orsat-type apparatus for the standard absorption and combustion tests on gases, equipment for the determination of gasoline content of lean and rich absorption oils, apparatus for the determination of molecular weights of oils by the freezing point method and other apparatus for running the standard tests of vapor pressure, A.S.T.M. distillation, etc.

The laboratory will render service in a number of ways, analyses of gas, gasoline and oil samples as outlined above; correlation of the analytical results such as calculation of specific gravity, heating value, molecular per cent and vapor pressure, from fractional distillation analysis and the approximate conversion of analytical results from one test to those from another in so far as this may be possible; calculation of plant material balances given the proper samples and plant operating data; and research work on problems for which it is equipped or may easily be equipped to handle.

Aside from its commercial activities the laboratory will serve the partnership in their consulting work on the design and operation of natural gasoline plant and equipment, complete test on plants involving data for plant material balances, specification of equipment, etc.

Doctor Podbielniak will also continue to manufacture and distribute the Podbielniak apparatus for the fractional distillation of gas and gasoline.

Mr. Raigorodsky has organized the Mid-Continent Engineers, Inc. for the purpose of engaging in the general manufacture, sale and construction of gasoline plants and similar equipment.

BRADFORD GASOLINE PLANT FIRE

BRADFORD, Pa., June 24.—Approximately $60,000 damage resulted from a fire at the Bradford Gasoline Co.'s plant here. A barreling plant, several tank cars, a box car and compressors were damaged, the origin of the fire remaining unknown. More than 80,000 gallons of gasoline were destroyed including one loaded car of 55-gallon drums of gasoline.

SINCLAIR WELL MAKES GASOLINE

The Sinclair Oil & Gas Co. is recovering approximately 60,000 gallons daily of what might be termed natural gasoline from its Oklahoma City well. This material tests approximately 70 gravity. At present it is run into the crude oil gathering system.

SEMINOLE GASOLINE OUTPUT AGAIN ESTABLISHES NEW PEAK

Seminole continues to establish a new peak monthly in its production of natural gasoline and a survey on June 20 places the daily average production at 1,177,200 gallons, an increase of 31,000 gallons over that given for May 23. This increase has come about through the extension of gathering lines and the corresponding increase in the output of the old plants rather than through the addition of new plants. Extensions to the previously developed areas has called for added lines and in some cases additional pumping, compressor and distillation units in many cases but the previous rush of building and development seems to have ended in favor of the plan of exchanging gas where possible and the full utilization of the existing capacity to effect every possible economy.

The comparatively low prices on the spot market are probably responsible for this as much as the failure of the field to supply any great amount of new gas. The slow movement of natural gasoline to refiners in the Mid-Continent area and the great increase in the production of natural gasoline in California, which is supplying a large share of the needs of foreign buyers, has dampened the hopes of Mid-Continent manufacturers regarding the immediate future of the market. However, those who are in a favorable position to view all factors except an unparalleled demand for their products just as soon as refiners begin shipping on midseason orders and the full effect of the increased runs of heavy West Texas crudes along the Gulf and East Coast is felt. California holds a key position in the future of the Mid-Continent market in this respect and in turn, California continues to witness the consistent increase in the production in the Seminole area as the greatest factor in the Mid-Continent market.

Of the list of companies showing an increase in their production in the past month, the Sinclair Oil & Gas Co. takes the lead. Through the extension of its gathering lines, substantial gains were recorded in the production of their Seminole City plants, at Bowlegs and in the St. Louis area. The production of the Sinclair company is now shown as 266,100 gallons daily and continues to be well above any other company in this field.

As a result of the purchase of the Cushing Refining & Gasoline Co.'s plants in the Seminole area by the Forrest E. Gilmore Co., the latter's production has been increased to 61,000 gallons. This company is also adding equipment in the newly acquired Little River plant that will increase its capacity from 14,000 gallons to 20,000 gallons and is adding units in the St. Louis plant that will increase its capacity from 18,000 gallons to 30,000 gallons. The company also expects to increase its original plant in the Little River area from a capacity of 25,000 gallons to 35,000 gallons. The combined increase in these three plants will thus amount to 28,000 gallons daily. All of the work is expected to be completed within the next 30 days. Within the next two weeks the Amerada Petroleum Corp. will complete the installation of additional gathering lines for its Earlsboro and Maud plants and the production from these is expected to be increased about 4,000 gallons. The Empire is adding units to its Maud plant also, and when completed its capacity will have been increased to handle about 4,000,000 feet of additional gas and the production from the plant will probably increase about 8,000 gallons.

In the St. Louis area, Gillespie and Moran are adding six units to their plant which will bring the capacity up to 35,000 gallons daily. Another important addition being made to the operating plants is that of the Victor Gasoline Co. through the addition of 12 units to its Little River plant which will add approximately 15,000 gallons to the company's production there. This addition is expected to be completed within the next 30 days.

Analyzing the trend of production by pools, the old Seminole City area continues to lead by a comfortable margin and in the last month, has added 26,000 gallons to its daily average production, largely through the increased output of the Sinclair plants. The Mission area also shows a substantial increase in its production at the end of the 30-day period and this may be expected to further increase as the field is more intensively developed. The only area to show any material decline is the St. Louis-Pearson area where the production at the beginning of the 30-day period was 202,500 gallons and on May 20 was shown as 192,500 gallons.

The few companies showing a decrease in their production attribute this to warm weather and the lesser recovery of condensate from the well flowing operations.

The accompanying table indicates the average daily production in gallons by pools and by companies on June 20.

NATURAL GASOLINE PRODUCTION IN GREATER SEMINOLE

	Seminole City	Bowlegs	Earlsboro	Little River	St. Louis Pearson	Maud	Mission	Total
Amerada Pet. ...	.....	3,500	12,000	.....	.....	24,000	.....	44,500
Barnsdall Oil Co.	.....	.....	20,000	.....	.....	21,500	.....	41,500
Carter Oil Co. ..	†120,000	10,000	.....	40,000	.....	.....	.....	170,000
Crosbie & Moran	.....	.....	27,000	.....	.....	.....	.....	27,000
Empire O. & R.*	25,000	37,000	.....	16,000	.....	13,500	.....	91,500
F. E. Gilmore Co.	.....	4,000	.....	39,000	18,000	.....	.....	61,000
Gilmore Prod. Co.	.....	.....	.....	3,000	.....	.....	.....	3,000
Gypsy Oil Co. ..	.....	.....	.....	64,400	.....	.....	65,900	130,300
Independent O. & G. Co.	.....	.....	.....	34,000	.....	.....	15,000	49,060
Magnolia Pet. Co.	.....	.....	4,500	.....	25,000	.....	.....	29,500
Moran & Gillespie	.....	.....	.....	.....	24,000	.....	.....	24,000
Pure Oil Co.	16,500	15,000	.....	10,000	.....	.....	.....	41,500
Powers, M. F., ..	.....	.....	.....	.....	16,000	.....	.....	16,000
Shell Pet. Corp...	.....	6,500	.....	.....	54,000	.....	17,800	78,300
Sinclair O. & G..	98,000	92,600	13,000	7,000	55,500	.....	.....	266,100
Skelly Oil Co. ..	.....	.....	35,000	.....	.....	8,000	.....	43,000
Victor Gaso. Co..	6,000	20,000	20,000	15,000	.....	.....	.....	61,000
Total	265,500	193,600	131,500	228,400	192,500	67,000	98,700	1,177,200
Prod. May 17.	239,400	187,800	136,900	228,800	202,500	64,500	86,400	1,146,300

*Includes production of Indian Territory Illuminating Oil Co. †Includes 50,0000 production in Searight Pool.

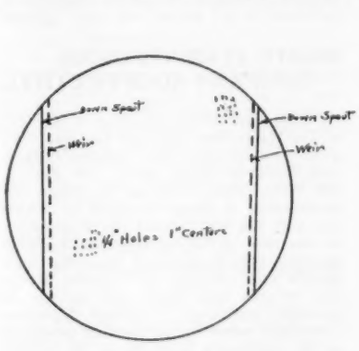
A PRACTICAL SUGGESTION

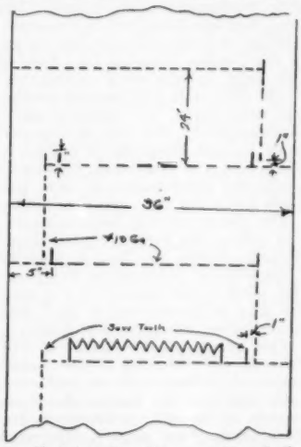
SIEVE TYPE ABSORBER

During recent years absorbers packed with various kinds of baffling materials have been discarded with the bubble and sieve types taking their place. Portability, salvage value, freedom from clogging, initial cost, pressure drop and extraction efficiency are advantages over the average packed absorber.

In absorption the time of travel through the tower is an important factor in the ultimate degree of absorption. With bubble or sieve towers this is accomplished by the depth of the liquid oil on each tray, channelling, submergence and pressure drop being the limiting factors. Positive circulation on each plate or tray is important in preventing the disposition of sediment. The absorbers must give efficient contact between absorption menstrum and the gas, have a large volumetric efficiency and not carry over at maximum capacity or slight pressure variations.

These prerequisites for an efficient absorber are met to a satisfactory degree by the simply designed and inexpensively constructed one described here. The absorber is essentially a shell, having perforated plates with each plate carrying a downspout and overflow weir of the sawtooth type. The number of holes on each plate will determine the capacity of the tower, it being recommended not to use more than 3 inches water differential on each plate.





The absorber shown in sketch is made of three-sixteenths-inch steel, welded throughout, 30 feet high and carries 11 trays. The oil connections are 2-inch and the gas 6-inch. At 35 pounds pressure this absorber has efficiently handled 2,100,000 cubic feet per day.

Brief Items for Petroleum Refiners

Eason Oil Company Announces Further Expansion Program

Announcement has been made by T. T. Eason that the name of the Bolene Refining Co. of Enid, Okla., has been changed to the Eason Oil Co. This follows the announcement of a month ago by Mr. Eason that he had acquired the controlling stock of the Bolene Refining Co. and the Healdton Oil & Gas Co. He states that a wide expansion of its marketing facilities will be carried out by the company in the states of Oklahoma, Wisconsin, Minnesota, Illinois, Iowa and Kansas. The Eason Oil Co. has also received a franchise from the Ethyl Gasoline Corp. to make and market Ethyl gasoline in the State of Oklahoma.

Mr. Eason is well known in oil circles in Oklahoma. He has been actively connected with the industry since 1914, when he founded the Healdton Oil & Gas Co., acting as secretary-manager of the company practically since its beginning. The Healdton Oil & Gas Co. supplies the crude for the refinery at Enid. Mr. Eason was one of the original stockholders of the Bolene Refining Co.

FORM ATLANTIC PACIFIC AND GULF OIL COMPANY

KANSAS CITY, Mo., June 22.—Plans have been completed for the organization of the Atlanic, Pacific and Gulf Oil Co. which will market products in Kansas City's territory and retail stations have been established at several points in Iowa, Illinois and Texas.

J. P. Howe is president of the new company. Associated with him are H. C. Meier, Council Bluffs, Iowa, vice president; C. E. Howe, Kansas City, treasurer; Glen Bird, Kansas City, secretary. The officers and Judge Nelson E. Johnson of Kansas City comprise the board of directors.

The company will handle a general line of petroleum products, including gasoline, distillate, fuel oil and motor oils. State division headquarters for Iowa will be established in Des Moines August 1 with W. L. Rockwell in charge.

A 2,500,000-gallon storage plant is being equipped in Kansas City. The company has a 3,500-bbl. refinery at Wichita Falls, Tex., now operating as the Orient Petroleum Co.

Mr. Howe was vice president of the Manhattan Oil Co. prior to its merger into the Independent Oil & Gas Co. The Manhattan Oil Co., of which he was the founder, furnished the name and charter for the Manhattan Oil Co. which attained large size here and of which he was active vice president.

In the new corporation various holdings and existing companies have been merged by Mr. Howe and his associates.

OPEN TANK CAR OFFICE

CHICAGO, June 22.—The Lynch-Clarisey Co., one of the largest distributors of fuel oils in Chicago, has established a wholesale tank car marketing department with offices at 208 South LaSalle Street. This office will be under the management of Roger Q. Howard, who in addition to the marketing business will purchase for the company, its fuel oil, gas oil, distillate and the like, the quantity purchased being many million gallons annually.

Before engaging in the oil business, Mr. Howard was with the Santa Fe Railroad in Texas. From 1919 to 1926 he was connected with James B. Berry & Sons Co., and recently with the Swan-Finch Oil Corp., in an executive capacity.

UNITED STATES SUPREME COURT TO REVIEW PATENT CLUB CASE

NEW YORK, June 23.—An appeal will be taken to the Supreme Court of the United States to reverse the decision of the United States District Court in Chicago holding that the pooling of "cracking" patents for producing gasoline to be illegal.

This action was decided upon at a meeting of representatives of the "big four" of the American oil refining industry, namely, Standard Oil Co. of New Jersey, The Texas Company, Standard Oil of Indiana and the Gasoline Products Corp. The conference was held in the offices of The Texas Company here Thursday, June 20. The action of the United States District Court in Chicago was directed against these companies as the principal defendants.

Although no formal statement was issued concerning the discussion at this meeting, it was learned authoritatively that each company is to take independent action in making an appeal against the lower court's decision.

The appeal is to be filed immediately upon the entering of the District Court's decree, which is expected shortly. The proceedings are to be taken in Chicago. It is necessary to carry the case direct to the United States Supreme Court because of the fact that in the District Court proceedings judges of the Court of Appeals heard the arguments and gave judgment.

The point on which the appeal will be taken is in connection with the official report of the Master in Chancery, Charles Martindale of Minneapolis, in which he upheld the validity of patent pooling of gasoline refining processes by the 52 corporations involved, consisting of the companies named above and their subsidiaries.

The companies were sustained by the United States District Court in the anti-trust suit brought by the Federal Government in all respects save the single exception of patent pooling, which is the splitting of royalties received from outside companies which were thus licensed to use the four processes, which are controlled as follows: Burton process, owned by the Standard Oil Co. of Indiana. Tube and Tank, owned by the Standard Oil Co. of New Jersey. Holmes-Manly process, owned by The Texas Company, and the Cross process, owned by the Gasoline Products Corp.

Under the private arrangement existing between these companies each could issue licenses to outside companies to employ their individual patents and the patents of the other three so far as would be required for efficient "cracking," the production of gasoline in high pressure stills.

In its decision the District Court sustained the validity of the companies' practice of "cross-licensing" between themselves and subsidiary companies, and, in effect, gave complete confirmation of the legality of the patents themselves.

Reason for Pool

It was due to the fact that for many years litigation threatened because of the similarity of certain details of each of the above mentioned processes that the patent-owning companies decided to form what has been called the "Patent Club." This action did away with the possibility of endless infringement-of-patent suits. And it is this patent pool which the government charges, and is sustained in its charge by the District Court, constitutes a violation of anti-trust regulations.

The action decided upon by the "big

(Continued on Page 156)

MONA MOTOR OIL CO. BUYS OMAHA REFINERY

H. A. Searle, secretary and general manager of the Mona Motor Oil Co., a major jobbing and marketing organization with headquarters at Council Bluffs, Iowa, has purchased and will operate the refinery at Omaha, Neb., formerly known as the Omaha Refining Co. This plant was built in the early period of the World War and has changed hands several times since. Its operation has been handicapped by the cost of transporting crude by rail from the producing fields of Kansas and Oklahoma, but more recently the development of new Kansas fields has aided this situation somewhat.

The plant has not been operated for four years, the former owner being the Michell Oil Co. It has a capacity of 3,500 bbls. of crude daily, but considerable work is anticipated on the plant in the way of improvements and replacements before operation will begin.

This plant, when completed, will be the only one operating in the immediate States of Nebraska, Iowa and the Dakotas and for this reason the company expects to be able to secure a greater share of the local market. The work of remodeling the plant has already begun and while no date has been announced regarding the time it is expected to be placed in operation in the near future.

VACUUM MAY BUY LUBRITE

The Vacuum Oil Co., according to reports from St. Louis, is negotiating for the purchase of the properties of the Lubrite Refining Co. In reply to a query, H. T. Ashton, vice president of the Lubrite company, stated his company had "no statement to make at this time" regarding the purchase.

The Lubrite company has a 4,000-bbl. refinery in operation in East St. Louis, Ill. The company has large distributing facilities in St. Louis and other points.

WHITE STAR REFINING COMPANY ADOPTS ETHYL

White Star Ethyl Gasoline, a product of the White Star Refining Co., has been given prominence in the company's Michigan business during June. On June 1 the White Star Refining Co. began the distribution of Ethyl Gasoline in Michigan only but will expand the distribution of this fuel in the coming months. This gasoline will be supplied from the company's new refinery at Trenton, Mich., but because this plant will not be in operation until July 1, the first shipments have been made up of gasoline produced at the company's Wood River, Ill., plant.

FOREIGN SURVEY OF REFINERIES

A survey of foreign refineries has been made by the Bureau of Foreign and Domestic Commerce which includes a resume of the refining capacity by companies, the type of plant and the type and capacity of the cracking units in the respective countries. The subject of cracking has been added to the revised survey, the previous survey having been made in 1927. The bulletin may be secured as Trade Information Bulletin 623 from the Department of Commerce at Washington, D. C., for 10 cents.

CARDINAL DIXIE CO. ORGANIZED AT MUSKEGON

Control of the Cardinal Petroleum Co., independent gasoline, oil and petroleum products distributors in Muskegon, Mich., for seven years, has been purchased by J. J. Thiesen, of the Theisen-Clemens Co., of St. Joseph, Mich., and a new corporation to be known as the Cardinal Dixie Co. has been organized to continue the business.

Operating policies and products handled will remain the same as the company will be more closely associated with the Dixie marketing group which has spread from Michigan into 10 other Middle western and southwestern states.

Frank H. Emig, secretary-treasurer, and general manager of the company under the old organization, remains in this position. Practically all of the other officers and directors have been changed, with J. J. Thiesen, of St. Joseph, as president.

Other new officers are: Vice president, Joseph T. Riley, who was a director under the old organization; and directors, Roy F. Clemens and Rolland E. Barr, both of St. Joseph. They succeed the following officers: President, L. J. Lambert; vice president, William Bauer; and directors, Gerritt Yonker, John Mullen and Carl J. Westlund.

SHELL PLANT NEARS COMPLETION AT GULF

U. de B. Daly, president of the Shell Petroleum Corp., has announced the probable completion date of the company's new 25,000-bbl. refinery at Deer Creek, along the ship canal near Houston, Tex., as some time in the first half of August. The new refinery will occupy 350 acres and provision has been made for its expansion as warranted. The crude will be transported from West Texas through the company's own pipe line system. The refined products will be distributed locally and a great portion of the output will be shipped by tanker to the East Coast and to foreign countries. At present the Shell group of refineries in the United States is running in excess of 100,000 bbls. of crude daily and this figure will be materially increased with the starting up of the new plant. Other refineries are located at Wood River, Ill.; East Chicago, Ind.; Arkansas City, Kans., and New Orleans, La.

NEW CALIFORNIA MARKETER

FRESNO, Calif., June 22.—A new figure entered into the service station business in Fresno and Kern Counties recently when the South San Joaquin Gasoline Stations, Inc., began operation of approximately 30 stations which have been leased from the Standard Oil Co. Announcement to this effect was made by W. K. Hutton, president of the corporation, which was incorporated last month with a capitalization of $100,000.

BURFORD STARTS UNITS

PECOS, Tex., June 22.—The two Jenkins cracking units at the Burford Oil Co.'s plant here started operations in the past week and the gasoline output from the plant approximates 120,000 gallons daily. This company has also taken over the management of the line supplying the refinery with crude from the Winkler Field. This line is owned jointly by the Skelly Oil Co. and the Burford Oil Co. It is transporting about 10,000 bbls. of crude daily, about 5,500 of which is being run to the refinery and the balance is being loaded into tank cars to supply other refineries.

EXPECT EASTERN TANK WAGON TO ADVANCE

(Continued from Page 139)

future shipments at present levels. Sellers are firm in declining to operate on this basis, however.

Petroleum Exports

The following table shows principal exports of petroleum and refined petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
	June 15	June 8	June 1
Gasoline	310,000	894,000	374,000
Naphtha	853,000	842,000	962,500
Kerosene	197,000	403,000	37,000
Fuel oil	3,800	783,000	20,000
Lub. oil	2,148,000	900,000	1,782,400
Pet., refined	787,000	1,697,000	1,742,200
	Pounds		
Petrolatum		10,000	
Paraffin wax	1,435,000	423,000	982,000
Refined		314,000	
Scale	162,000	314,000	167,300
Lub. grease	1,516,000	495,000	1,763,300

A marked increase in the volume of lubricating oil exported from New York, shown in the table above, was brought about by the feeling of export operators that they could expect little price revision downward in the near future, and by a demand for deliveries which could not wait upon prospective market changes. There was a considerable slackening in export demand for gasoline, operators apparently depending upon the market to hold to its present level, although refiners think otherwise. Philadelphia has been the shipping point of a considerable quantity in recent weeks.

Imports

Imports of crude and refined oils at the principal United States ports for the week ended June 15 totaled 2,258,000 bbls., a daily average of 322,571 bbls., compared with 1,974,000 bbls., a daily average of 282,000 bbls. for the previous week and a daily average of 308,500 bbls. for the four weeks ended June 15. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast ports—	
Baltimore	252,000
Boston	67,000
New York	1,003,000
Philadelphia	398,000
Others	48,000
Total	1,768,000
Daily average	252,571
At Gulf Coast ports—	
New Orleans and Baton Rouge	325,000
Port Arthur and Sabine district	110,000
Tampa	55,000
Total	490,000
Daily average	70,000
At all United States ports—	
Total	2,258,000
Daily average	322,571
Daily average four weeks	308,500

California Oil Receipts

Receipts of California crude and refined oils at Atlantic Coast ports during the week ended June 15 totaled 468,000 bbls., a daily average of 66,857 bbls., against 257,000 bbls., a daily average of 36,714 bbls. for the previous week and a daily average of 55,464 bbls. for the four weeks ended June 15. Details follow:

(Barrels of 42 gallons)

Baltimore	75,000
New York	312,000
Others	81,000
Total	468,000
Daily average	66,857
Daily average four weeks	56,464
Distribution of total California oil receipts—	
Gasoline	387,000
Kerosene dist	81,000
Total	468,000

There were no receipts of California crude or refined at Gulf ports during the week.

CHICAGO REPORTS RECORD GALLONAGE

(Continued from Page 138)

style Pennsylvania tank cars running some of them as low as 3,500 gallons to a car load.

Trouble Over Contracts Foreseen

There may be some trouble with some of these contracts as the buyers assert that they are entitled to receive practically 80,000 gallons on a contract for 10 cars and that a Supreme Court decision is to the effect that when the number of gallons or barrels in a tank car ordered is not specified the buyer is entitled to receive or the seller to deliver approximately 8,000 gallons. In such a case as that mentioned the buyer would receive only one-half the quantity which he intended to contract for and which he might have assured himself of receiving if he had but specified that the order or contract was for 10 cars of 8,000 gallons each.

Aside from the good gallonage enjoyed by the jobbing trade there is little new. There have been several rather extensive sales of oil distributing businesses to major companies, such as the sale of the stations operated by the Louisiana Oil Refining Co. in Cincinnati and vicinity to the Cities Service Co., and of the stations of the Caldwell-Taylor Oil Co., in the same territory to the Standard Oil Co. of Ohio. There are some places where there is price cutting but as a whole prices are better maintained over the territory than a year ago.

HYDROGENATION OF OIL ON COMMERCIAL SCALE

(Continued from Page 135)

at Baton Rouge and the erection of a large commercial plant at Bayonne, N. J., capable of making 3,000 bbls. or more of gasoline daily is said to be under construction there. This has called for the making of special steel chambers with walls of great thickness, as the reaction chambers, to withstand the high pressures carried in the system. These are being made by piercing solid heated billets and then hammering the walls of the billet to the desired thickness.

The work being done by the Standard had its beginning about two years ago and followed the work of the German research group under the I. G. Farbenindustrie.

EVALUATION OF CRUDE INVOLVES MANY TESTS

(Continued from Page 135)

it is to be sold as a household furnace oil the flash might be included in the above list of tests.

If the residue remaining from the distillation is fuel oil, its quality may be judged from the following tests, Furol viscosity at 100 degrees Fahrenheit, per cent b.s. and water, pour point and gravity. The gravity is not important as an indication of quality but automatically gives it a market classification.

If the residue is processed to steam refined cylinder stock, it is best to view a 4-ounce sample bottle of the material. The report should include the results of the following laboratory determinations:

Precipitation number (as an index of the lub value).

Fire test.

Viscosity at 210 degrees Fahrenheit.

Pour point.

Color (compared to type).

In most cases cylinder stock sample is run to meet a certain fire test as 600 and a certain viscosity specification and the color of the resultant stock is compared to a standard or type. If the color is as good or better than the type, it is said to pass and if it is not as good, a price concession would have to be given in most cases.

CALIFORNIA LID IS OFF IN CURTAILMENT

(Continued from Page 39)

The proposed plan is an adaptation of the so-called Marietta or Smith-Dunn process which has proven so successful in the operations of the Union and Shell in the Dominguez Field of Los Angeles Basin. The introduction of excess dry gas into the Bell, Foix and Meyer zones for storage and repressuring work is of special significance at the present time as it will replace a part of the natural gas originally dissipated, increase the future recovery of these horizons and at the same time permit maximum development of the deep zones which are being jeopardized because of the large amount of natural gas being blown into the air.

Crude oil curtailment in California by mutual co-operation among producers has failed to accomplish the desired result although many operators complied explicitly with all regulations established by Umpire F. C. van Deinse who, incidentally, handled a very difficult job with exceptional merit. State production at the present time is more than 175,000 bbls. per day in excess of the 1928 daily average of 650,000 bbls. which the American Petroleum Institute designated as the objective when this curtailment plan was started a few months ago and the failure of this movement has forced California refiners and pipe line companies to store 19,784,915 bbls. of crude and refined oils since January 1, 1929. A further substantial addition to stocks can be anticipated unless the recently amended gas conservation law is rigidly enforced as a normal decline in state production is practically out of the question. Tideland development, deep drilling in proven fields and wildcat exploration practically precludes any substantial drop in production if this work continues uninterrupted.

Tideland Development

Tideland development at Elwood and Rincon is expected to prove an important factor in state production during the next several months as several ambitious projects have already been started out in the open ocean. Tideland drilling at Rincon will not prove of any consequence for another six or eight months due to the extreme depth at which production may be expected but similar work at Elwood will be reflected in state production within six months. It might not be amiss while commenting on projected tideland development at Elwood to mention the fact that this structure is definitely known to extend out into the open ocean. It is believed that about 40 per cent of the prolific Elwood Field is located beyond mean high tide and is thus susceptible to competitive drilling. Heretofore the Barnsdall and Rio Grande have been able to regulate drilling operations due to their exclusive holdings of productive acreage but from now on they will be obliged to engage in offset drilling.

The Barnsdall has already started construction work on four wharves with protecting caissons which will extend out into the open ocean at Elwood for a distance of 150 feet. Road construction is already well under way and the first tideland well of the Barnsdall and Rio Grande is expected to be started within the next 90 days. The Bankline Oil Co. is also expected to start tideland development at Elwood in the very near future as application has already been filed with the United States War Department for permission to construct three wharves which will be built in order to facilitate the drilling of six wells out in the open ocean. The cost of this tideland development will cost around $500,000, while the Barnsdall's investment will approximate $750,000. The Union Oil Co. and Pacific Western Oil Co. also contemplate tideland development out beyond mean high tide offsetting the Barnsdall's holdings in the Elwood Field of Santa Barbara County, the Pacific Western already having material on ground for the initiation of work. It is quite obvious in view of this extension work that the Elwood Field will show greatly increased production later this year. In the Rincon Field, located approximately 25 miles east of the Elwood district, the General Petroleum has already started driving piles for the first tideland develpment started in this section.

Course of Refiners

Those familiar with conditions existing on the Pacific Coast are naturally wondering what course the major refiners will pursue now that all production restrictions have been lifted. Will they continue to store large quantities of crude and refined oils at present prices in the hope that the recently enacted gas conservation law will ultimately rectify conditions or will they be obliged to reduce prevailing prices in order to justify the erection of additional tankage? If this were only a temporary condition it would be logical to assume that the larger companies would continue accumulating stocks of crude and refined oils indefinitely but apparently there is no relief yet in sight. Kettleman Hills has been tentatively taken out of the picture, although the operating agreement has not yet been signed and sealed. Operators in the south and middle domes have agreed to refrain from drilling until January 1, 1931, but the agreement effecting the north dome has not yet been ratified by all parties concerned. Secretary Wilbur, who has been in California for the past week, is expected to return to Washington within the next few days and a definite decision is anticipated shortly after his return to the capital. Deep drilling and the probable discovery of new fields does not make the California picture look any too promising, although a strict enforcement of the gas conservation law would greatly alleviate local conditions.

COLONEL WALSH MIXES FUN WITH HIS WORK

(Continued from Page 43)

Palmer House until the close of the convention which nominated William Jennings Bryan for President—all without a cent of expense. He sat in the convention hall and saw the historic stampede which resulted in the nomination of the Commoner.

Maurice decided it would not be worth while to go back to Kansas City and renew his demands upon Superintendent Sweetman for the other half of the railroad fare to Chicago. Later he and Mr. Sweetman became excellent friends and they did much work together in the interests of the natural gas industry.

Last Job as One of the Hands

After the Democratic convention Mr. Walsh worked for several years in the gas-fitting shop of J. J. Ewing. Then, in 1898, he went to Huntington, W. Va., where he worked as a gas-fitter for the Triple State Natural Gas Co. He went to Zanesville, Ohio, in 1900 and worked as a fitter for a few months. That was his last job as one of the hands, for in the same year he went to Mansfield, Ohio, to become superintendent of the Logan Gas Co. He held this position three years and then went to Kansas City and assumed charge of the introduction of natural gas in Lawrence, Kans., for Joseph Heim, who had obtained a franchise in that city.

In 1904 Mr. Walsh took charge of the natural gas interests of Charles Patterson in Atchison, Ottawa, Egerton, Princeton and other Kansas towns. He resigned this position a few months later and took a similar one with J. O. Davidson, who had obtained natural gas franchises in Wichita, Hutchinson and Newton, Kans. In 1906 he joined the H. M. Byllesby & Co. organization and he has remained with it ever since. His first work was installation of a natural gas system in Oklahoma City for the Oklahoma Gas & Electric Co., a Byllesby subsidiary. Colonel Walsh stayed in that city till 1913, when he was transferred to Louisville, Ky. There he was made superintendent of the Louisville Gas & Electric Co., also a subsidiary. He introduced natural gas in that city, which is still his home.

Colonel Walsh received his military title through appointment to the staff of Gov. William J. Fields of Kentucky in 1926. While he was in Oklahoma City he was instrumental in having one of the annual meetings of the Natural Gas Association of America held there. He made it a memorable event. Each night he had native dances performed by Quanah Parker and his band of Indians, all in full redskin regalia. Another feature was an enormous natural gas flambeau made with a 35-foot joint of 4-inch pipe on top of his company's building. In 1923 Colonel Walsh brought the meeting of the same organization to Louisville and again he provided a program which they still talk about.

Colonel Walsh married Miss Katherine Lodewich of Detroit, who died in 1923. There were no children.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	June 25		June 18		June 11	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.08¼	.08¾	.08¾		.08¾	
56-58 450 endpoint	.08¼	.08¾	.08¾		.08¾	
58-60 450 endpoint	.08¼	.08¾	.08¾	.09	.08¾	.08⅞
*58-60 437 endpoint (U. S. Motor)	.0925		.0925		.0924	
*60-62 437 endpoint	.0942		.0938		.0929	
*60-62 400 endpoint	.0950		.0950		.0950	
*64-66 375 endpoint	†.09½	.09¾	.0975		.0983	
68-70 360 endpoint	.09¼	.09¾	.09¾	.10	.09¾	.10
64-66 437 endpoint (blend)	.08¾	.09	.09	.09¼	.09⅛	.09¼
NORTH TEXAS—						
56-58 450 endpoint	.08¼	.08⅜	.08¾	.08¾	.08⅜	.08¾
58-60 450 endpoint	.08¼	.08⅜	.08½	.08¾	.08½	.08¾
58-60 437 endpoint (U. S. Motor)	.08¼	.08¾	.08¾	.09¼	.08¾	.09
60-62 400 endpoint	.08½	.08¾	.09	.09¼	.09	.09¼
64-66 390 endpoint	.08⅝	.09	.09⅛	.09⅜	.09⅛	.09⅜
64-66 375 endpoint	.08¾	.09	.09½	.09⅝	.09½	.09⅝
68-70 360 endpoint	.09¼	.09¾	.09⅝	.09¾	.09⅝	.09¾
64-66 437 endpoint (blend)	.08½	.08¾	.08½	.08¾	.08½	.08¾
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.09¾	.10	.09¾	.10	.09¾	.10
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.09¾	.10	.09¾	.10	.09¾	.10
PENNSYLVANIA—						
52-54 Naphtha	.09	.09½	.08½	.09	.08½	.09
54-56 Naphtha	.09½	.10	.09¼	.09½	.09¼	.09½
58-60 Gasoline	.10	.10½	.10	.10½	.10	.10½
60 Gasoline	.10¼	.10½	.10¼	.10½	.10¼	.10½
62 Gasoline	.10½		.10½		.10½	
64 Gasoline	.10¾	.11	.10¾	.11	.10¾	.11
68-70 350 endpoint gasoline	.11¼	.11½	.11¼	.11½	.11¼	.11½
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09	.10
CHICAGO DISTRICT (Based on Group 3) —						
50-52 450 endpoint (Naphtha)	.08¾	.08⅞	.08¾	.09	.08¾	.09
56-58 450 endpoint	.08¾		.08¾	.09	.08⅝	.08⅞
58-60 437 endpoint (U. S. Motor)	.08¾	.09¼	.08¾	.09¼	.08⅞	.09¼
60-62 400 endpoint	.09¼	.09¾	.09¼	.09⅝	.09¼	.09½
64-66 375 endpoint	.09⅝	.09⅞	.09⅝	.09⅞	.09⅝	.09⅞
68-70 360 endpoint	.09¾	.10	.09¾	.10	.09¾	.10
64-66 437 endpoint (blend)	.09	.09¼	.09⅛	.09¼	.09⅛	.09¼
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

*Weighted average prices June 24, 17 and 10, as reported by representative refiners. Sales to jobbers only. †No sales reported.

*Louisiana Arkansas, Mississippi, East Texas delivery.

NATURAL GASOLINE

	June 25		June 18		June 11	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07¼	.07½	.07⅝		.07½	.07⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.07¼	.07½	.07½		.07½	
Grade B, 76-83.9, 375 e p., rec. 85%	.06½	.06⅝	.07⅛	.07¼	.07⅛	.07¼
Grade BB, 84-92, 375 e.p., rec. 85%	.06½	.06⅝	.07⅛	.07¼	.07⅛	
Grade C, 80-90, 375 e.p., rec. 78%	.06½	.06⅝	.07	.07⅛	.07	.07⅛
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07⅜	.07½	.07¼	.07½	.07¼	.07½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.07⅜	.07½	.07¼		.07¼	.07½
Grade B, 76-83.9, 375 e.p., rec. 85%	.06½	.06⅝	.07⅛		.07⅛	.07¼
Grade BB, 84-92, 375 e.p., rec. 85%	.06½	.06⅝	.07⅛		.07⅛	
Grade C, 80-90, 375 e.p., rec. 78%	.06½	.06⅝	.07	.07⅛	.07	.07⅛
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.07⅝	.07¾	.07¾	.08	.08	
Grade BB, 84-92, 375 e.p., rec. 85%	.07¼	.07⅜	.07⅜	.07¾	.07¾	
Grade C, 80-90, 375 e.p., rec. 78%	.07¼	.07⅜	.07½		.07½	
CALIFORNIA—						
75-78, 375-390 endpoint	.08½	.09	.08½	.09¼	.08½	.09¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07¼	.07½	.07⅝		.07½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.07¼	.07½	.07½		.07½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.06½	.06⅝	.07¼		.07¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.06½	.06⅝	.07⅛		.07¼	
Grade C, 80-90, 375 e.p., rec. 78%	.06½	.06⅝	.07	.07⅛	.07	.07⅛

BURNING OIL

	June 25		June 18		June 11	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.05¾	.06	.05¾	.06	.05¾	.06
42-44 water white kerosene	.06⅛	.06½	.06¼	.06½	.06¼	.06½
***NORTH LOUISIANA—**						
41-43 water white kerosene	.06½	.06⅜	.06¾	.07	.06¾	.07
NORTH TEXAS—						
41-43 water white kerosene	.05½		.05½		.05½	
40-42 water white kerosene	.05¼		.05¼		.05¼	
***ARKANSAS—**						
41-43 water white kerosene	.06½	.06¾	.06¾	.07	.06¾	.07
PENNSYLVANIA—						
43 Kerosene prime white	.06¾	.07	.06½	.06¾	.06¾	.07
45 Kerosene water white	.06¾	.07	.06½	.06¾	.06¾	.07
46 Kerosene water white	.07	.07¼	.07	.07¼	.07	.07¼
47 Kerosene water white	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 Mineral Seal	.07¼	.07½	.07¼	.07½	.07¼	.07½
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.05¾	.06½	.05¾	.06½	.05¾	.06½
Engine distillate, 43-44, 445 endpoint	.08	.08¾	.08	.08¾	.08	.08¾
Engine distillate, 42-44, 480 endpoint	.07½	.08¼	.07½	.08¼	.07½	.08¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.05¾	.06	.05¾	.06	.05¾	.06
42-44 water white kerosene	.06	.06¼	.06	.06¼	.06	.06¼
GULF COAST (Export)—						
41-43 prime white	.07¾		.07¾		.07¾	
41-43 water white	.08¾		.08¾		.08¾	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	June 25		June 18		June 11	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.45	.50	.50	.55	.50	.55
18-22 Fuel Oil, per bbl.	.50	.55				
20-22 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
22-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
26-30 Fuel Oil, per bbl.	.77½	.82½	.82½	.87½	.82½	.87½
28-30 Fuel Oil, per bbl. (industrial)	.85	.90	.87½	.90	.87½	.90
32-36 Gas Oil (industrial)	.02⅜	.02½	.02⅜	.02½	.02⅜	.02½
32-36 Gas Oil (straw color)	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	.03⅛
38-40 Straw Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
NORTH TEXAS—						
Below 20 Fuel Oil	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
32-36 Gas Oil (straw)	.02⅜	.02½	.02⅜	.02½	.02⅜	.02½
38-40 Straw Distillate	.03¼		.03¼		.03¼	
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.70	.80	.70	.80	.70	.80
30-32 Gas Oil	.02¾	.03	.02¾	.03	.02½	.02¾
***ARKANSAS—**						
33-36 Distillate	.03	.03¼	.03	.03¼	.03	.03¼
30-32 Gas Oil	.02¾	.03	.02¾	.03	.02½	.02⅝
16-22 Refinery Fuel Oil, per bbl.	.70	.80	.70	.80	.70	.80
GULF COAST (South Texas)—						
Gas Oil	.04		.04		.04	
Bunker C Fuel (cargo lots), per bbl.	.80	.85	.80	.85	.80	.85
Bunker C Fuel (small lots)	.95	1.00	.95	1.00	.95	1.00
PENNSYLVANIA—						
30-34 Fuel Oil	.04½	.04¾	.04½	.04¾	.04½	.04¾
36-40 Fuel Oil	.04¾	.04⅞	.04¾	.04⅞	.04¾	.05
CALIFORNIA—						
33-36 Distillate	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾
26-32 Distillate	.03½	.04	.03½	.04	.03½	.04
15-20 Fuel Oil, Bunker (at tide water)	.65	.85	.65	.85	.65	.85
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.70	.85	.70	.85
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
18-22 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.50
28-30 Fuel Oil	.87½	.95	.87½	.92½	.85	.90
32-36 Gas Oil (zero)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
32-36 Gas Oil (industrial)	.02⅝	.02½	.02¼	.02½	.02¼	.02½
36-38 Distillate	.03¼	.03⅜	.03⅛	.03¼	.03⅛	.03¼
38-40 Straw Distillate	.03⅜	.03⅝	.03⅜	.03½	.03⅜	.03½

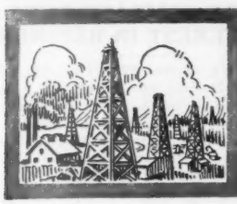
*Louisiana, Arkansas, Missippi, East Texas delivery.

LUBRICATING OIL AND WAX

	June 25		June 18		June 11	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
150 vis., 4 color, 20-25 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
180 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 4 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
180 vis., 5 color, 23-28 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 5 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
280 vis., 3 color, 25-30 cold test	.15¾	.16	.15¾	.16	.15¾	.16
280 vis., 4 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
280 vis., 5 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
Cylinder Stocks:						
600, steam refined, light green	.14	.16	.14	.15	.14	.15
600, steam refined, dark green	.13	.14	.13		.13	
190-200 vis., D color Bright Stock	.40		.40		.40	
150-160 vis., D color Bright Stock	.35	.36	.35		.35	
150-160 vis., E color Bright Stock	.33		.33		.33	
Waxes:						
124-126 White Crude Scale Wax	.02½		.02½		.02½	
PENNSYLVANIA—						
34 Neutral	.07¾	.08	.07¾	.08	.07¾	.08
34 Sundebloom	.07¾	.08	.07¾	.08	.07¾	.08
36 Miners' Neutral	.07¾	.08	.07¾	.08	.07¾	.08
150, 3 color	.20½	.21	.20½	.21	.21½	.22
180 3 color	.26	.26½	.26	.26½	.27	.27½
200, 3 color	.28	.28½	.28	.28½	.29	.30
200, 3 color	.31	.31½	.31	.31½	.31	.31½
600, steam refined	.31	.32	.32½	.33	.32½	.33
635, steam refined	.34	.35	.34	.35	.35	.36
650, steam refined	.37	.38	.37	.38	.39	.39½
600, Pennsylvania Flash	.38½	.39½	.38½	.39½	.41½	.42
630, Pennsylvania Flash	.41	.42	.41	.42	.44	.45
600, E filtered	.36½	.37	.36½	.37	.36½	.37
600, D filtered	.39	.40	.39	.40	.43½	.44
Pennsylvania Bright Stock	.51	.52	.51	.52	.51	.52
*122-124 White Crude Scale Wax	.02⅞	.03	.02⅞		.03	
*124-126 White Crude Scale Wax	.03	.03⅛	.03	.03⅛	.03¼	

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06½	.07	.06½	.07	.06½	.07
No. 3 color, 200 vis., pale oil	.09½	.10	.09½	.10	.09	.10
No. 3 color, 300 vis., pale oil	.10½	.10¾	.10½	.10¾	.10	.10½
No. 3½ color, 500 vis., pale oil	.11¾	.12¼	.11¾	.12¼	.11	.11½
No. 4 color, 750 vis., pale oil	.13	.13½	.13	.13½	.13	.13½
No. 5 to 6 color, 200 vis., red oil	.08½	.08¾	.08½	.08¾	.07½	.08
No. 5 to 6 color, 300 vis., red oil	.09¾	.10¼	.09¾	.10¼	.08½	.09
No. 5 to 6 color, 500 vis., red oil	.11¼	.11½	.11¼	.11½	.09½	.10½
No. 5 to 6 color, 750 vis., red oil	.12½	.13	.12½	.13	.12½	.13
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12
No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16½	.16	.16½	.16	.16½

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	June 25	June 18	June 11
Gasoline, U. S. Motor, 58-60, 437	.10	.10	.10
Kerosene, water white, 41-43	.08	.08	.08
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05	1.05	1.05
†Fuel Oil, Diesel 28-30, per bbl.	2.00	2.00	2.00
Gas Oil, 32-36 gravity	.05	.05 .05½	.05 .05½
25 pale Paraffin Oil	.10½	.10½	.10½
28 pale Paraffin Oil	.07¼	.07¼	.07¼
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.11	.11	.11
225 red Paraffin Oil	.09½	.09½	.09½
200 red Paraffin Oil	.09	.09	.09
Refined Wax:			
120-122 a.m.p., per lb.	.03⅝	.03⅝	.03⅝
125-127 a.m.p., per lb.	.04¼	.04¼	.04¼
130-132 a.m.p., per lb.	.04¾	.04¾	.04¾
133-135 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
135-137 a.m.p., per lb.	.06½	.06½	.06½
Petrolatum in barrels, carload lots, per pound:			
Dark green	.02	.02	.02
Amber	.03½	.03½	.03½
Extra amber	.03¾	.03¾	.03¾
Cream	.06½	.06½	.06½
Lily white	.07½	.07½	.07½
Snow white	.08½	.08½	.08½

*Lighterage 5.0 cents a barrel extra. †Lighterage 6.5 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	June 25	June 18	June 11
Kerosene, prime white	.08	.08	.08
Kerosene, water white	.09	.09	.09
600, steam refined cylinder stocks, in bbls.	.42	.42 .43	.42 .43
635, steam refined	.44	.44 .45	.44 .45
650, steam refined	.49	.49 .50	.49 .50
600, Pennsylvania Flash	.52	.52 .53	.52 .53
630, Pennsylvania Flash	.57	.57 .58	.57 .58
600, Warren E	.44	.44 .45	.44 .45
600, Oil City E	.44	.44 .45	.44 .45
Light 140-150 Bright Stocks	.61	.61 .66	.61 .66
Dark 140-150 Bright Stocks	.60	.60 .64	.60 .64

LOS ANGELES EXPORT PRICES

	June 25	June 18	June 11
Kerosene, water white	.05½ .06	.05½ .06	.05½ .06
U. S. Motor Gasoline, 53-55, 437 e.p.	.07 .07½	.07 .07½	.07 .07½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)* ..... .80
Other fields .....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* .....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler, Mitchell, and Glasscock (See gravity table).
Chalk† ..... .65

*Includes Howard County and Westbrook Fields.
†Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929) .....$ .85
Smackover, 24 gravity and above (May 20, 1929) 1.00
Cotton Valley (Below 36 gravity May 22) ..... .85
Bellevue (May 29, 1929) 1.30
Uranin (May 21, 1929) 1.10
East El Dorado (May 22, 1929) ..... .85
Other fields .....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana, and Magnolia Petroleum Co.; Uranin posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

Grade A (May 20)* $1.30
Grade B .....See gravity table
Jennings, La. (March 14)† 1.05
Saratoga, Batson, Dayton (March 14, 1927)‡ 1.20
Markham (March 14)§ 1.00
High Island (December 14)¶ 1.00

*Humble Oil & Refining Co., The Texas Company, Gulf Pipe Line Co., and Sun Pipe Line Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company.
¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective May 21, 1929)

Rock Creek, Wyo. $1.40
Salt Creek .....See gravity table
Big Muddy 1.43
Grass Creek, heavy (July 27, 1928) .... .90
Grass Creek, light 1.65
Mule Creek 1.20
Elk Basin 1.65
Lance Creek 1.68
Poison Spider (March 14, 1927) 1.00
Notches (March 14, 1927) ..... .65
Rex Lake (February 22) 1.10
Osage 1.65
Lost Soldier (contract, May 22) 1.05
Hamilton Dome (March 14, 1927) ..... .85
Greybull 1.65
Cat Creek (Montana) (July 27, 1928).. 1.48
Sunburst (Montana) (May 23, 1929) ... 1.75
Torchlight 1.65
Hogback (New Mexico) (July 27, 1928) 1.70

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTH-WESTERN TEXAS

Luling (May 2)* .....$ .90
Mirando (May 20, 1929)† ..... .90

(Continued on Page 146)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Okla., Kans. N. C. Tex.	2 No. La. and Arkansas	3 Crane, Upton, Crockett, Winkler, Howard, Pecos, Texas crudes, and Lea, N. Mex.	4 Stephens, Ark.	5 Wheeler (Texas Panhandle)	6 Gray County (Texas Panhandle)	7 Carson and Hutchinson (Texas Panhandle)	8 Salt Creek, Wyo.	9 Grade B & Light Crude (G. Coast)	10 Somerset (South Central Texas)
24 and above	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....
Below 25	.85	....	.70	....	....	....	....	....	1.15	....
25 to 25.9	.90	....	.74	....	....	....	....	....	1.18	....
26 to 26.9	.95	....	.78	....	....	....	....	....	1.21	....
27 to 27.9	1.00	....	.82	....	....	....	....	....	1.24	....
Below 28	....	1.00	....	.90	.90	.90	.90	....	....	....
28 to 28.9	1.05	1.05	.86	.94	.90	.90	.90	....	1.27	....
29 to 29.9	1.10	1.10	.90	.98	.90	.95	.90	1.10	1.30	....
30 to 30.9	1.15	1.15	.94	1.02	.95	1.00	.90	1.15	1.33	....
31 to 31.9	1.20	1.20	.98	1.06	1.00	1.05	.90	1.20	1.36	....
32 to 32.9	1.25	1.25	1.02	1.10	1.05	1.10	.95	1.25	1.39	1.06
33 to 33.9	1.30	1.30	1.06	....	1.10	1.15	1.00	1.30	1.42	1.07
34 to 34.9	1.35	1.35	1.10	....	1.15	1.20	1.05	1.35	1.45	1.09
35 to 35.9	1.40	1.40	1.14	....	1.20	1.25	1.10	1.40	1.48	1.11
36 to 36.9	1.45	1.45	1.18	....	1.25	1.30	1.15	1.45	....	1.13
37 to 37.9	1.50	1.50	....	....	1.30	1.35	1.20	1.50	....	1.15
38 to 38.9	1.55	1.55	....	....	1.35	1.40	1.25	....	....	1.16
39 to 39.9	1.60	1.60	....	....	1.40	1.45	1.30	....	....	1.17
40 to 40.9	1.65	1.65	....	....	1.45	1.50	1.35	....	....	....
41 to 41.9	1.70	1.70	....	....	1.50	1.55	1.40	....	....	....
42 to 42.9	1.75	1.75	....	....	1.55	1.60	1.45	....	....	....
43 to 43.9	1.80	1.80	....	....	1.60	1.65	1.50	....	....	....
44 and above	1.85	1.85	....	....	1.65	1.70	1.55	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule May 20, 1929, making price below 26 gravity 70 cents per barrel, 26-26.9 gravity 75 cents, 27-27.9 gravity 85 cents, 28-28.9 gravity 90 cents, 29-29.9 gravity 95 cents, 30-30.9 gravity $1.05, and 31.31.9 gravity $1.15, with balance of the price schedule as shown above.

Oklahoma—Carter Oil Co., Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, May 20.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran, Prairie Oil & Gas Co., Sinclair Oil Refining Co., Humble Oil & Refining Co., The Texas Company and Gulf Refining Co., May 20.

Kansas—Prairie, Sinclair, The Texas Company and Carter, May 20.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only], May 20, Standard Oil Co. of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co., Magnolia Petroleum Co., schedule applies to Pine Island, Haynesville, Bull Bayou, Louisiana and El Dorado, Ark., light crude.

Column 3—Humble Oil & Refining Co. and Magnolia Petroleum Co., May 20.

Column 4—Atlantic Oil Producing Co., Prairie Oil & Gas Co., Louisiana Oil & Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., May 20, 1929.

Column 8—Midwest Refining Co., May 20, 1929. All crude over 37 gravity $1.50 per barrel.

Column 9—Humble Oil & Refining Co., May 20, 1929 (schedule ends 35 and above).

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective January 18, 1929)

Gravity—	1 Salt Lake, Potrero, Newport, Long Beach, Summerland, Lawndale Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Signal Hill, Seal Beach, Huntington Beach, Athens, Inglewood, Rosecrans-Dominguez, Watsonville	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria, Coalinga	7 Wheeler Ridge, Fruitvale	8 Orcutt Ventura, Rincon	9 Ventura Ave.	10 Elwood Terrace
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.70	.75	....
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.70	.80	....
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.70	.85	....
21 to 21.9	.89	.88	.74	.85	.89	.74	.74	.86	.86	....
22 to 22.9	.93	.91	.80	.90	.92	.80	.80	.87	.87	....
23 to 23.9	.97	.94	.85	.95	.95	.85	.85	.90	.90	....
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.94	.94	....
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.98	.98	....
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	1.02	1.02	....
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06	....
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10	....
29 to 29.9	1.21	1.16	1.16	1.13	1.15	1.06	....	....	1.14	....
30 to 30.9	1.25	1.20	1.22	1.16	1.20	1.10	....	....	1.18	....
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	1.23	....
32 to 32.9	1.35	....	1.34	....	1.30	1.18	....	....	1.28	....
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	1.34	....
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	1.40	1.16
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	1.46	1.22
36 to 36.9	1.59	....	....	....	1.50	....	....	....	1.52	1.28
37 to 37.9	1.65	....	....	....	1.55	....	....	....	1.58	1.34
38 to 38.9	1.71	....	....	....	1.60	....	....	....	1.64	1.40
39 to 39.9	1.77	....	....	....	1.65	....	....	....	1.70	1.46
40 to 40.9	1.83	....	....	....	....	....	....	....	1.76	1.52
41 to 41.9	1.89	....	....	....	....	....	....	....	1.82	1.58
42 to 42.9	1.95	....	....	....	....	....	....	....	1.88	1.64

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hillis and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

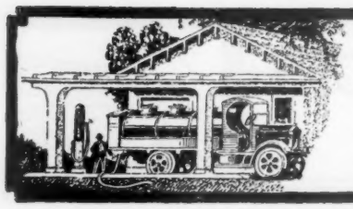
Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity, Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9 posted by Union Oil Co. only.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns June 25.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago dist.†..	16.0	17.0	...	13.0
Decatur, Ill. ...	16.2	17.2	...	13.1
E. St. Louis ...	15.4	16.4	...	12.2
Joliet	16.4	17.4	...	13.3
Peoria	16.2	17.2	...	13.1
Quincy	16.2	17.2	...	12.9
Davenport, Ia..	19.5	20.5	3.0	13.3
Des Moines ..	19.5	20.5	3.0	13.3
Keokuk	19.5	20.5	3.0	13.3
Sioux City	19.1	20.1	3.0	12.9
Duluth, Minn..	20.5	21.5	3.0	13.9
Mankato	20.1	21.1	3.0	13.7
Minneapolis ...	20.2	21.2	3.0	13.9
LaCrosse, Wis..	19.2	20.2	2.0	14.0
Milwaukee	18.1	19.1	2.0	12.9
Madison	18.3	19.3	2.0	13.1
Detroit, Mich...	19.8	20.8	3.0	14.7
Grand Rapids..	19.7	20.7	3.0	14.6
Saginaw	19.9	20.9	3.0	14.8
Evansville, Ind.	20.0	21.0	4.0	14.0
Fort Wayne ..	20.4	21.4	4.0	14.4
Indianapolis ..	20.2	21.2	4.0	14.2
South Bend ...	20.4	21.4	4.0	14.4
Fargo, N. D...	20.9	21.9	2.0	16.9
Huron, S. D. ..	21.3	22.3	4.0	14.7
Sioux Falls ...	20.1	21.1	4.0	14.4
K. C., Mo.* ...	18.9	19.9	3.0	11.6
Springfield* ...	18.8	19.8	3.0	12.5
St. Louis*	17.9	18.9	2.5	12.3
St. Joseph	18.5	19.5	3.0	12.2
Wichita, Kans..	17.8	18.8	3.0	11.8
Bartlesville, Ok.	17.5	18.5	3.0	11.5

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	15.7	12.9
V. M. & P. Naphtha	17.2	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	18.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex. ...	15.0	19.0	2.0	13.0
Fort Worth ...	15.0	18.0	2.0	12.0
Houston	15.0	19.0	2.0	13.0
San Antonio ..	15.0	19.0	2.0	11.0
El Paso	17.0	20.0	2.0	16.0
Texarkana	16.0	19.0	2.0	13.0
Muskogee, Ok.*	16.0	19.0	4.0	13.0
Okla. City* ...	16.0	19.0	4.0	10.0
Tulsa*	14.0	18.0	4.0	10.0
Ft. Smith, Ark.	15.0	19.0	5.0	12.0
Little Rock ...	20.0	24.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo...	18.0	21.0	4.0	15.5
Pueblo	18.0	21.0	4.0	15.5
Grand Junction	22.5	25.5	4.0	19.0
Casper, Wyo. ..	21.0	24.0	4.0	14.0
Cheyenne	22.0	25.0	4.0	15.5
Butte, Mont. ..	25.5	28.5	5.0	20.0
Helena	25.5	28.5	5.0	20.0
Salt Lake, Utah	22.0	25.0	3.5	17.0
Albu'que, N. M.	21.0	24.0	5.0	17.0
Boise, Idaho ..	24.5	27.5	4.0	19.0
Twin Falls	24.5	27.5	4.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	17.0	*22.0	...	14.0
Philadelphia ..	17.0	*22.0	...	14.0
Scranton	17.0	*22.0	...	14.0
Allentown	17.0	*22.0	...	14.0
Altoona	17.0	*22.0	...	14.0
Erie	14.0	*18.0	...	14.0
Dover, Del.	20.0	22.0	3.0	14.0
Wilmington ...	20.0	22.0	3.0	14.0
Springf'd, Mass.	18.0	20.0	2.0	15.0
Worcester	17.0	18.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	16.0	17.0	2.0	15.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven ...	18.0	20.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y...	15.0	17.0	2.0	15.0
New York* ...	19.0	21.0	2.0	15.0
Buffalo	16.0	18.0	2.0	14.0
Rochester	16.0	18.0	2.0	14.0
Syracuse	16.0	18.0	2.0	15.0
Boston, Mass...	18.0	20.0	2.0	15.0
Augusta, Me...	20.0	22.0	4.0	15.0
Manch't'r, N.H.	20.0	22.0	4.0	15.0
Burlington, Vt..	19.0	20.0	4.0	15.0

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga. ...	22.0	24.0	4.0	16.5
Augusta	22.0	24.0	4.0	15.5
Macon	22.0	24.0	4.0	16.5
Savannah	21.0	23.0	4.0	15.5
Birm'ham, Ala.	22.0	24.0	4.0	16.0
Mobile	22.0	24.0	4.0	15.0
Montgomery ...	23.0	25.0	4.0	16.5
Clarks'le, Miss.	22.0	24.0	5.0	12.5
Jackson	22.0	24.0	5.0	13.0
Natchez	21.5	23.5	5.0	14.0
Gulfport	23.5	25.5	5.0	14.0
Vicksburg	21.5	23.5	5.0	14.0
Jack'ville, Fla..	22.0	24.0	5.0	14.5
Miami	23.0	25.0	5.0	15.5
Pensacola	23.0	25.0	5.0	14.5
Tampa	22.0	24.0	5.0	14.5
Lexington, Ky..	21.0	23.0	5.0	15.5
Covington	21.0	22.0	5.0	15.5
Louisville	21.0	23.0	5.0	15.0
Ashland	18.0	19.0	5.0	15.5
Catlettsburg ..	18.0	19.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco..	19.0	23.0	3.0	15.5
Los Angeles ..	18.5	22.5	3.0	15.5
Reno, Nev. ..	24.0	26.0	4.0	19.0
Portland, Ore..	19.5	23.5	3.0	16.5
Seattle, Wash..	18.5	22.5	2.0	16.5
Tacoma	18.5	22.5	2.0	16.5
Spokane	22.5	26.5	2.0	20.5
Phoenix, Ariz..	18.0	22.0	4.0	20.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	20.25	22.25	4.0	13.25
McCook	21.75	23.75	4.0	14.75
Norfolk	20.75	22.75	4.0	13.75
N. Platte	21.75	23.75	4.0	14.50
Scottsbluff	21.75	23.75	4.0	14.25

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City ..	14.0	18.0	2.0	13.0
Newark, N. J...	16.0	20.0	2.0	13.0
Annapolis, Md..	18.0	22.0	4.0	13.0
Baltimore	18.0	22.0	4.0	12.0
Cumberland ...	18.0	22.0	4.0	13.0
Washington ...	16.0	20.0	2.0	12.0
Danville, Va. ..	19.0	23.0	5.0	12.0
Norfolk	19.0	23.0	5.0	13.0
Petersburg	19.0	23.0	5.0	13.0
Roanoke	19.0	23.0	5.0	13.0
Richmond	19.0	23.0	5.0	13.0
Charles'n, W.Va.	18.0	22.0	4.0	13.0
Keyser	18.0	22.0	4.0	13.0
Parkersburg ..	18.0	20.0	4.0	13.0
Wheeling	18.0	22.0	4.0	13.0
Charlotte, N. C.	19.0	23.0	5.0	13.0
Hickory	19.0	23.0	5.0	13.0
Mt. Airy	19.0	23.0	5.0	13.0
Salisbury	18.0	20.0	5.0	13.0
Charleston, S.C.	20.0	24.0	6.0	13.0
Columbia	20.0	24.0	6.0	13.0

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points* ..	20.0	21.0	4.0	†14.0

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	18.5	22.5	5.0	16.0
Baton Rouge ..	17.0	21.0	4.0	14.5
Alexandria	18.0	22.0	4.0	16.0
Lafayette†	19.0	23.0	5.0	14.0
Lake Charles† .	19.5	23.5	5.0	16.0
Shreveport	18.5	22.5	4.0	15.0
Knoxv'le, Tenn..	20.0	24.0	5.0	16.0
Memphis	18.0	22.0	5.0	12.5
Chattanooga ..	21.5	25.5	5.0	16.0
Nashville	19.0	23.0	5.0	16.0
Bristol	22.0	25.0	5.0	14.0
Lit. Rock, Ark..	20.0	24.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.
†Includes 1-cent parish tax.

TANK WAGON CHANGES

May 27—Standard Oil Co. of Kentucky advanced the gasoline tank wagon and station prices 1 cent throughout its territory except in Florida.

June 14—Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 2 cents in Knoxville, Tenn., to 20 cents and 24 cents.

June 23—Magnolia Petroleum Co. advanced the gasoline tank wagon and station prices 1 cent in Oklahoma to equalize the increase in the tax from 3 cents to 4 cents.

STANDARD BUYS STATIONS

CINCINNATI, Ohio, June 22.—The Standard Oil Co. of Ohio has purchased outright the stations owned by the Caldwell-Tatlor Oil Co. at Columbus and through a new holding company will control the stations operated by the same company in this city and Dayton.

A.P.I. DIRECTORS MEET

NEW YORK, June 24.—The regular monthly meeting of the board of directors of the American Petroleum Institute has been called for June 28. It is expected the committee which represented the Institute at the Colorado Springs oil conference formally will make its report.

BUYS OIL JOBBER

CHICAGO, June 22.—The Refiners Oil Sales Co., of Dayton, Ohio, has purchased and will continue the oil jobbing business of the Brilliant Oil Co. of Brilliant, Ohio.

WAYSIDE COMPANY BUYS INTEREST IN REFINERY

CHICAGO, June 24.—The Wayside Oil Co. of Detroit has purchased a controlling interest in the Michigan Central Refining Co., according to an announcement here. The Michigan Central company was recently organized and is now building a refinery at Muskegon, Mich.

The Wayside company also has purchased the bulk stations and service stations of the Savin Oil Co. located at Detroit. An arrangement has been completed with the Northland Oil Co., a marketing company of Chicago which will handle the tank car sales of the refinery when it is completed. Edward Lyon, formerly connected with the Waco Oil Co., is president of the Wayside Oil Co.

Construction work of the new refinery has been started under the direction of John Wrather who is superintendent of refineries for Del Rio Refining Co. and the Amarillo Producers & Refiners Corp. According to J. D. Wrather, president of the Amarillo company, the Michigan Central plant will be ready to operate by August 1.

STATION OWNERS ASSOCIATION

CHICAGO, June 22.—Station owners who were stated to control 300 stations in Chicago met at the Morrison Hotel and organized the Service Station Owners Association of Chicago. Failure of the present associations to stabilize prices for gasoline and for services rendered motorists such as greasing and washing were given as the reason for the forming of the new organization.

CRUDE OIL PRICES

(Continued from Page 145)

Salt Flat (May 20, 1929)§	1.25
Rockdale-Minerva (April 15):	
Below 28 gravity	1.25
28-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	...
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
§Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective January 4, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.10
Bradford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (May 22, 1929).	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (May 22, 1929)	1.90
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (May 22, 1929) ...	1.80
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29) ...	.60

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective May 21, 1929)

Lima	$1.80
Wooster	1.90
Illinois	1.75
Indiana	1.57
Princeton	1.75
Plymouth	1.28
Waterloo (November 17, 1926)	1.35
Western Kentucky	1.83
Dundee, Mich. (May 23, 1929)‖	1.10
Midland, Mich. (June 3, 1929)*	1.70
Saginaw, Mich., Saginaw Sand (February 10)†	1.89
Saginaw, Mich., Berea Sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 15)‡	1.50
Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (June 1, 1929)§ ...	1.80
Oil Springs (Canada)¶	2.27
Petrolia (Canada)¶	2.26

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
‖Posted by Standard of Indiana for boat shipment.

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MOTOR OIL

Employes Stock Plan Makes Millions

New York Standard to Continue System. Shell Union Expansion Program. Standard Dividends in Second Quarter

The 21,208 employes who became subscribers to the first stock purchase plan for employes instituted by the Standard Oil Co. of New York, have become richer by $28,046,335.03 during the five years the plan has been in operation. The company has announced the plan will be continued for another three years.

During the five years more than 21,000 subscribing employes authorized deductions from their wages amounting to $17,228,367.27. The company contributed 50 per cent of the payroll deductions, or $8,614,177.26. Dividends upon stock purchased by the employes, added to their accounts, amounted to $2,203,790.50. The total of payroll deductions, company contributions and dividends amounted to $28,046,335.03.

During the plan a stock dividend of 25 per cent was declared and the proportionate share credited to subscribing employes.

Upon the death of an employe, or his retirement upon pension or through no fault of his own, he or his beneficiary receives the full amount of stock purchased for him from wage deductions, company contributions and dividends.

During the operation of the plan 1,870 employes died or were retired, who either directly or through their beneficiaries, received 54,032 shares of stock. At the end of the five-year period there were 14,155 subscribing employes who held 766,701 shares. The total allocation amounted to 820,733 shares, distributed to 16,025 employes. Refunds were made to 5,183 employes who withdrew voluntarily.

There were approximately 30,000 employes eligible to participate. Approximately 53 per cent received shares of stock.

In the company's second stock purchase plan, no employe will be entitled to have more than $100 a month deducted from his wages.

Shell Union

In conjunction with plans for establishing a nation-wide organization in the United States, the Shell Union Oil Corp., a subsidiary of the Royal Dutch-Shell, has issued $40,000,000 worth of 5½ per cent convertible preferred stock, one of the largest issues of its kind this year.

Shell Union some time ago embarked upon an expansion program by which it will have retail distribution in every state except Texas. Additional refinery facilities have been acquired in Texas and Louisiana. It has also enlarged its pipe line systems in different areas.

The new $40,000,000 capital will permit the company to reimburse its treasury for the expenditures made in its new development, and provide adequate working capital. Capital stock now consists of 13,062,236 shares of no par common.

In December last, Shell Union Oil sold to shareholders about 3,000,000 additional shares of common stock at $10 a share, three shares for every 10 held. This operation realized about $30,000,000 and was used in increasing its producing, transportation, refining and marketing facilities. It also brought about the acquisition of an interest in the Flintkote Co.

The $40,000,000 which has been realized will bring the investment in the expansion program to about $70,000,000. It is understood a considerable additional outlay will be required before the program is completed.

Penn-Mex Fuel

Penn-Mex Fuel Co. (controlled by South Penn Oil Co.) reports for year ended December 31, 1928, net profit of $1,965,701 after expenses, depreciation, depletion, etc. Income account for year 1928 follows: Gross $4,003,878; operating expenses $1,239,429; balance $2,764,449; depreciation and depletion $798,748; net profit $1,965,701; dividends $800,000; surplus $1,165,701.

Tide Water Associated

New York Stock Exchange has approved for listing 1,863,509 additional shares of no par common stock of Tide Water Associated Oil Co. Of this amount 1,638,509 shares will be issued to holders of the common stock of Tide Water Oil Co., in the ratio of one and three-fourths shares of Tide Water Associated common for each share of Tide Water Oil common. There will be issued to a banker 100,000 shares, while 125,000 shares will be reserved for the management stock plan. The additional 1,638,509 shares of common stock also provides for conversion of the outstanding preferred stock of Tide Water Oil Co.

Outstanding stocks of Tide Water Associated Oil Co. on June 10 consisted of 4,900,738 shares of common of no par, 731,645 shares of $100 preferred, and 201,490 shares of $100 par preferred stock of Tide Water Oil Co.

Standard Oil Dividends

Cash dividend disbursements by the Standard Oil group in the second quarter of 1929 have established a new high record of $66,047,877, according to figures compiled by Carl H. Pforzheimer & Co., specialists in Standard Oil securities. This new high mark, which exceeds payments for the first quarter by approximately $3,000,000, was accomplished in the face of a reduction of $6,963,500 in dividends by the Standard Oil Co. of Indiana compared with the first quarter. This company paid out $8,704,376 as the regular dividend of 62½ cents a share compared with $15,667,877 in the preceding quarter when an extra dividend of 50 cents was paid. This decrease was partially offset by a distribution of $3,100,000 of New York Transit Co. in connection with the readjustment of its capital structure, which entailed a special cash dividend of $62 a share. Standard Oil of New Jersey's payments were $3,094,371 greater as the result of an increase in the extra dividend from 12½ cents a share to 25 cents a share. Semiannual dividends of Illinois Pipe Line and Anglo-American Oil companies increased the total figure $2,000,000 and $1,525,000 respectively.

For the first half of the current year cash dividend disbursements by this group will amount to $129,427,495, the highest amount ever paid out in any semiannual period and larger than the dividends paid in the entire year of 1922. The record of quarterly dividends during the past few years is as follows:

	First quarter	Second quarter	Third quarter	Fourth quarter	Full year
1929	$63,379,618	$66,047,877			
1928	48,927,670	57,694,206	$50,068,102	$62,050,357	$218,740,334
1927	55,873,413	54,291,615	47,728,440	55,724,472	213,617,940
1926	40,580,317	*50,618,451	46,427,278	62,685,648	200,327,594
1925	34,355,618	41,905,728	35,140,584	42,104,169	153,506,099

*Includes $4,000,000 paid by Southern Pipe Line Co. in partial liquidation.

Lion Oil Refining

Lion Oil Refining Co., of El Dorado, Ark., statement shows earnings during May of $442,004.28 before depreciation, depletion and Federal taxes, and $230,878 after depletion and depreciation but before taxes. The statement was issued subsequent to the regular meeting of the directors at which the usual quarterly dividend of 50 cents on the common stock was ordered, payable June 27. In issuing the earnings statement, T. H. Barton, president, called attention to the fact that the earnings were before the recent raise in crude.

Anglo-Persian Oil

Anglo-Persian Oil Co., Ltd., reports for nine months ended December 31, 1928, net profit of £1,975,657, after depreciation, interest, extra depreciation, reserves, etc., equivalent, after dividend requirements on first and second preferred stocks, to 9.82 per cent on £13,425,000 common stock.

Production in the Masjid-i-Sulaiman district in Persia continued to increase steadily. Existence of a large oil-bearing structure at Haft Kel has been definitely established by a number of flowing wells and active development work is proceeding.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

Feb. 9	55.28	April 20	58.46
Feb. 16	55.35	April 27	58.34
Feb. 23	54.92	May 4	59.13
March 2	56.43	May 11	59.75
March 9	55.96	May 18	59.30
March 16	58.63	May 25	57.73
March 23	58.52	June 1	56.45
March 30	58.57	June 8	58.37
April 6	58.26	June 14	57.76
April 13	58.52	June 21	56.76

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Par value	Stocks	For week ended June 22: Sales	Open	High	Low	Last	Change
$6.75	.45	2 7/16	.55	1½	.53	$5	Amer. Con. Oilfields	14,400	½	½	7/16	½	+ ¼
..	..	7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	1,500	3½	4	3½	3⅝	+ ¼
..	..	2¾	1	4½	2¼	$10	Argo Oil	200	2	2¼	2	2¼	+ ⅛
85¼	60	40	20½	55	32¾	N.P.	British American	No sales.					
28⅜	9¼	28¼	15½	4½	3⅞	25c	Carib. Syndicate (new)	1,200	3⅜	3⅝	3¼	3¼	— ⅛
..	..	58¾	40¼	90⅞	54	$20	Cities Service	8,700	28⅜	28⅝	28⅜	28⅝	.....
..	..	95⅜	87	103½	94½	100	Cities Service, pfd.	300	97	97⅜	96⅞	97⅜	.....
..	..	8⅞	7⅜	9⅝	8⅞	10	Cities Service, pfd. B	No sales.					
3½	1¾	3⅞	1⅛	3¼	76	1	Colombia Syndicate	1,300	¾	1⅞	⅝	1⅞	+ ⅞
..	..	9¾	6⅜	8⅞	6¼	10	Consolidated Royal	100	7	7	7	7	.....
16	10	14⅞	9½	17½	9½	N.P.	Creole Syndicate	9,800	8⅞	8⅞	8½	8½	— ⅞
..	..	3	.50	3¼	.76	N.P.	Crown Central	1,100	1¾	1¾	1½	1⅝	+ ⅛
7⅞	6¾	12	4	33½	3¼	N.P.	Darby Petroleum	700	15	15⅛	14½	14½	— ¾
..	..	2½	74	2¼	1	N.P.	Derby Oil & Refining	16,600	8½	11	8½	10⅝	+ 2⅛
..	..	16¾	4	21⅛	7½	N.P.	Derby Oil & Refining, pfd.	No sales.					
..	..	2	.40	.53	.15	N.P.	Gilliland ctfs.	No sales.					
98	92	118	86¼	165	101⅛	$25	Gulf Oil Corp.	5,700	173	178⅛	170	171	— 1⅛
$3.00	.83	2½	.80	3⅜	1	5	Intercontinental Pet.	17,500	1⅝	1¾	1½	1¾	+ ⅛
..	..	2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	No sales.					
12¼	5¾	10⅞	5⅛	9⅜	5⅛	25	Leonard Oil & Dev.	4,800	4½	4¾	4¼	4¼	— ¼
27	20	27½	20	43⅞	20	N.P.	Lion Oil & Refining Co.	700	33¾	34	32	32½	— ½
46	30	59¾	37	69⅛	48½	$25	Lone Star Gas	3,700	78¼	82⅞	77¾	82⅞	+ 3⅞
2⅞	1	2⅞	.80	1⅞	.50	1	Magdalena Syndicate	3,700	½	½	½	½	+ 1/16
34	12½	52	12	48½	32	N.P.	Margay Oil	No sales.					
8	5½	12⅛	5	8	2¾	N.P.	Mexico-Ohio Oil	200	4	4	4	4	.....
1¾	1⅛	1½	1	1⅞	.76	$1	Mountain & Gulf	1,200	⅞	1	⅞	1	+ ⅛
26	23	29¼	22¾	28⅞	19½	10	Mountain Producers	4,300	16⅜	16⅜	15¼	15¼	— 1½
6⅝	5	5⅞	4⅝	5⅝	4¼	5	New Bradford	1,700	3⅞	3⅞	3½	3½	— ⅜
..	..	16	9¼	11⅞	7⅛	1	New Mex. & Ariz.	200	5⅝	5¾	5⅝	5⅝	— ⅜
..	..	12¾	9½	14¼	8½	N.P.	North Central Texas	400	10⅝	10⅝	10⅝	10⅝	.....
10⅛	5⅞	9⅜	3¼	6	2⅛	N.P.	Pandem	2,200	1⅞	2	1⅝	1¾	— ⅛
12¼	11¾	12⅛	7	15⅝	8½	N.P.	Pantepec Oil	4,900	6½	6½	6⅛	6½	.....
22¾	12	13½	5⅛	7⅝	4⅞	N.P.	Pennok Oil	No sales.					
17	8½	24⅜	7	18	4⅞	25	Red Bank Oil	No sales.					
30¼	12	15½	3½	12⅞	4⅛	N.P.	Reiter-Foster	2,800	5¼	5¼	4	5	— ¼
7	4½	7	4½	12	4⅛	N.P.	Ryan Consolidated	500	7	7	6½	6½	— ⅛
10	7⅛	8	5¼	7¼	5½	$10	Salt Creek Cons.	100	3⅛	3⅛	3⅛	3⅛	— ¼
35	24⅛	35½	27¼	35	23⅞	10	Salt Creek Prod.	3,500	19	19⅛	18½	18⅝	— ⅜
6⅞	1¼	7	1¼	3½	1	5	Savoy Oil	900	..	2½	1½	2½	.....
27	7⅝	26½	17	22⅞	13	10	Tidal Osage	No sales.					
25¾	7⅝	23¾	15	21¼	13⅛	10	Tidal Osage, nonvoting	No sales.					
92	63½	92	63½	93¼	75	100	Transcontinental, pfd.	500	136	136	135	136	.....
8	4½	7⅜	4¼	9⅛	4¾	5	Venezuelan Petrol	700	4	4	3⅞	4	.....
8⅛	5½	8	4¾	8¼	4⅞	$1	Woodley Petroleum	1,900	5⅛	5⅛	4¾	4⅞	— ⅜
6½	6	6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	No sales.					

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low		Listed capital	Par value	Stocks—	Div. rate	Last paid	For week ended June 22 Sales	Open	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	43⅞	27½	(sh)	922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	4,500	26	26	24½	24½	—1½
74	39⅞	82⅛	35⅛	85	51⅛	(sh)	209,180	N.P.	American Republics Corp.	.....	.....	5,500	49	51	46	46¾	—2¼
60	44¾	50¼	35	53⅜	37½		$57,260,300	$25	Associated Oil	50cQ	Dec. 31, 28	4,000	43	44½	42½	44	+1½
128⅜	97	131⅜	104	66⅜	50		50,000,000	25	Atlantic Refining	25cQ	Dec. 15, 28	24,700	70⅜	72¼	69¼	70⅝	+ ⅛
33½	23½	35½	20¾	53	20		35,194,000	25	Barnsdall Corp.	50cQ	Feb. 5, 29	36,400	41⅛	42⅞	40½	41	— ⅛
94½	50	96¾	65	94⅞	68		20,785,400	100	General Asphalt	.....	.....	15,200	84½	85½	81⅛	82½	—1⅜
72	50¼	175⅜	60⅛	167	79		25,000,000	100	Houston Oil	.....	.....	1,200	78	83⅞	78	78	+2¼
34	19⅝	32⅜	17⅝	38⅜	21¾	(sh)	959,457	N.P.	Independent Oil & Gas	50cQ	Jan. 31, 29	17,300	36	36½	34⅝	34⅝	—1⅛
12¾	7½	12⅛	7⅝	39⅝	9		8,203,080	$10	Indian Refining	.....	May 31, 24	23,400	45	47⅜	43	44½	— ⅝
25⅞	16½	37¾	20½	39⅛	27⅜	(sh)	3,992,122	N.P.	Lago Oil & Transport	.....	May 1, 27	38,900	34½	38⅝	33	33½	— ½
19⅞	12	18⅛	10	19¾	9⅜	(sh)	1,237,078	N.P.	Louisiana Oil Refining	.....	.....	6,200	13	13	12⅝	12¾	— ¼
28	16½	22¾	12	25½	12½	(sh)	330,000	N.P.	Maracaibo Oil	.....	.....	100	14	14	13½	13½	— ½
63⅜	49¼	58½	31	49¾	33	(sh)	2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	34,800	34⅞	36¾	34¼	36	+1⅛
13¾	6	9¼	3	73	4⅝	(sh)	945,939	N.P.	Mexican Seaboard	.....	Dec. 15, 20	60,300	38⅝	45	38⅝	44¼	+5¾
37	20½	39⅜	25½	44½	25½	(sh)	1,357,461	N.P.	Mid-Continent Petroleum	50cQ	Feb. 15, 29	13,400	34	34⅞	33⅝	34	+ ½
104¼	90	105	97	120½	103¼		$6,718,000	$100	Mid-Continent Petroleum pfd.	$1.75Q	Sept. 1, 28	No sales.					
2½	½	3¾	1⅝	7⅜	2⅜		24,298,850	10	Middle States	.....	July 1, 23	14,500	3⅞	3⅞	3½	3⅝	— ¼
76½	56⅛	65⅞	40⅛	54⅞	38¼		$48,807,400	$50	Pan American P. & T.	.....	Oct. 20, 27	1,000	56	57	54	54	—2⅛
78⅜	56⅞	66⅜	40¼	58⅞	37⅜		121,097,900	50	Pan American P. & T. B.	.....	Nov. 15, 24	166,800	59⅜	61⅝	56⅛	58½	—1½
46	30	37⅞	16¾	28⅜	15½	(sh)	400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	400	14½	14½	14	14½	.....
32	4½	18⅞	8	21¾	11½	(sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	200	9⅝	9⅝	9⅝	9⅝	.....
99⅜	51	83	54	108	70		$2,935,200	$100	Panhandle P. & R. pfd.	.....	July 2, 23	No sales.					
57⅜	40	60¼	36¼	53⅞	35¼	(sh)	2,406,796	N.P.	Phillips Petroleum	37½cQ	Jan. 2, 29	16,800	38¾	38⅞	37½	37⅞	— ⅜
....	....	1⅛	½	5¼	½		$29,622,925	$25	Pierce Oil Corp.	.....	.....	1,900	2¼	2¼	2⅛	2⅛	— ⅛
7	2¼	5½	2½	7	3½	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	5,100	4½	4⅝	4¼	4½	+ ⅛
60¼	48	55½	45⅝	68	46		60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	12,100	57½	58⅜	65⅝	56⅝	— ½
137½	122½	190	130¾	280	172		$101,250,000	$25	Prairie Pipe	75cQ*	Mar. 31, 29	7,300	59	60¼	59	59¾	+1¼
20¾	11	33⅞	16¾	29⅞	16		$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	500	18⅜	19¼	18¼	18¼	—1⅛
41¾	30¾	50	36⅞	49⅝	41		2,845,350	50	Producers & Refiners pfd.	.....	May 1, 25	110	43⅝	43¾	40⅝	40⅝	—1⅞
31	25¼	33½	25	31⅝	19		75,959,350	25	Pure Oil Co.	25cQ	Dec. 1, 28	15,700	27¾	28½	27	27¼	— ½
27½	22	28⅝	25⅜	56	23		47,025,000	$25	Richfield Oil	.....	Nov. 15, 28	9,900	42	43¼	41¼	41⅜	—1⅛
57⅜	47⅜	54½	44¼	64	44⅝	(sh)	611,303	13.40	Royal Dutch, N. Y. shares	50cQ	Jan. 10, 29	4,400	54	54¾	53½	53½	—1
48⅝	40½	47⅞	41⅜	57½	40⅝	(sh)	£30,000,000	£1	Shell Transport & T.	$1.45	July 23, 28	No sales.					
31	24	31¾	24⅝	39¼	23¼	(sh)	20,000,000	N.P.	Shell Union Oil	35cQ	Dec. 31, 28	27,800	27¾	28½	26½	26⅝	—1⅜
25⅝	15⅛	26⅜	14¼	27¼	18⅛		$8,357,000	$10	Simms Petroleum	10cQ	Dec. 15, 28	29,100	32⅜	33½	30¼	31	—1⅝
24⅞	16⅜	22⅜	15	46¾	17⅜	(sh)	4,501,915	N.P.	Sinclair Consolidated	.....	.....	151,600	37¾	38⅝	36¼	36½	—1¼
99½	90	104½	97	110	102½		$16,604,600	$100	Sinclair Consolidated pfd.	$2Q	Nov. 15, 28	200	109	109	109	109	.....
37⅛	26⅝	37⅜	24⅛	42⅝	25		27,396,590	25	Skelly Oil Co.	50cQ	Dec. 15, 28	22,900	41½	42¼	38½	40⅜	— ⅝
63⅝	51½	60¾	50⅜	80	53	(sh)	12,594,098	N.P.	Standard Oil of California	65½Q	Dec. 15, 28	41,600	74	75¾	72	73⅛	— ¼
46⅜	37½	41⅜	35⅛	59⅜	37⅜		$611,120,700	$25	Standard Oil of New Jersey	25cQ*	Dec. 15, 28	69,100	58⅜	58⅝	56	56⅜	—1½
47¼	30⅜	34⅛	29¾	44¼	28⅜		427,973,275	25	Standard Oil of New York	40cQ	Dec. 15, 28	29,100	39¼	40⅜	39	39⅝	— ⅛
41¾	30⅛	34⅞	30	77	31½	(sh)	1,206,073	N.P.	Sun Oil	25cQ	Dec. 15, 28	3,900	62⅛	65	62⅛	63	+1
5¼	1	6½	3⅛	14¼	2½	(sh)	1,267,000	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	28,800	8	8¼	7⅝	7⅞	— ¼
58	48	58	45	74⅜	50		$211,076,650	$25	The Texas Corporation	75cQ	Jan. 1, 29	33,800	62	63¼	60⅝	61¼	— ⅝
19½	12	18⅞	12	26⅝	12⅛		8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	7,300	17⅜	18½	17⅝	17⅝	— ¼
39¼	27	29⅛	19	41½	19⅝	(sh)	2,168,410	N.P.	Tide Water Oil Co.	20cQ	Dec. 15, 28	5,600	37¼	37½	34⅞	35	—2¼
103	87¼	90⅛	85	100¼	86		$20,705,200	$100	Tide Water Oil Co. 5% pfd.	65½cQ	Dec. 15, 28	400	95	95¼	95	95¼	+ ⅛
27	20⅞	19¼	15¾	25	14¾	(sh)	4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	35,400	21⅜	21⅞	19⅝	19⅞	—1⅝
5½	3	10⅜	3¾	14¾	7¼	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	41,100	11	11⅛	10½	10⅞	.....
58⅜	37¼	56½	39⅝	58	42¾		$94,798,100	$25	Union Oil of California	50cQ	Nov. 10, 28	6,500	47⅛	49½	47⅛	49½	+2⅛
120⅜	84¼	127½	94	128⅛	110		31,061,200	100	Union Tank Car Co.	$1.25Q	Dec. 1, 28	400	135	142	135	142	+1
30⅛	23½	34½	24½	44⅞	26	(sh)	356,000	N.P.	Warner Quinlan	50cQ	Jan. 2, 29	5,700	30⅝	31¾	29⅜	31½	+ ⅛
29¾	25⅛	27½	20	38	20⅛	(sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Jan. 20, 29	2,400	34⅛	34⅞	33¼	33⅞	—1
									Wilcox Oil & Gas	.....	.....	1,500	21	21¼	21	21¼	+ ⅛

*Also extras. †Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

21	16	21⅝	17⅞	22⅝	14⅞		£4,126,460	£1	Anglo-American Oil	.....	June 6, 28	1,200	14½	14½	14¼	14½	.....
....	....	3¾	¾	5	1¼	(sh)	300,000	N.P.	Atlantic Lobos	.....	.....	100	1½	1½	1½	1½	— ⅛
76	65	69	50	56½	44½		1,000,000	25	Borne Scrymser	$1S.A.	Oct. 15, 28	100	38	38	38	38	.....
59½	42	60	45	76	53		10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 28	100	69	69	69	69	+1
82½	65	126	76½	161	117		3,000,000	25½	Chesebrough Mfg.	$1Q	Dec. 28, 28	200	165	167¾	165	167¾	+3
25⅞	17½	22⅝	16¼	23	16		36,057,840	10	Continental Oil	.....	Dec. 15, 27	21,600	20⅝	21¾	20¼	21	+ ¼
137	102	137	89	114	67		1,500,000	50	Cumberland Pipe Line	$1A	Dec. 15, 28	2,500	69	69	68	68	—1
63¾	43	68½	47	88	64½		5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	24,200	..	..	..	..	.....
32½	9⅞	13½	3½	13	4¼		16,000,000	100	Galena Signal Oil	.....	June 30, 25	No sales.					
68½	52	68½	54	114¾	59¼		73,117,577	25	Humble Oil & Refining	30cQ*	Jan. 1, 29	7,200	116	116½	114⅛	114⅞	—1⅜
144½	125½	182	123¾	290½	176½		20,000	100	Illinois Pipe Line	10%S.A.	Dec. 15, 28	50	311	311	310	310	—5
....	....	64¾	37¾	104	56¾	(sh)	6,458,267	N.P.	Imperial of Canada	25cQ	Dec. 1, 28	7,000	27¼	27⅞	27	27⅝	+ ⅛
72½	58	94½	61	91⅞	74⅜		$5,000,000	$50	Indiana Pipe Line	$1Q	Feb. 15, 29	300	95⅜	95⅜	95	95	+ ¼
35½	28¾	39	28¼	55	35	(sh)	7,123,444	N.P.	International Petroleum	25c	Nov. 30, 28	4,000	47½	48	45½	46¼	—1¼
20¾	12½	24	13½	32⅜	19⅜		$6,363,350	12.50	National Transit Co.	25c	Dec. 15, 28	1,400	23	23	22⅜	22⅝	— ¼
51½	27¼	44½	31¼	75	38½		5,000,000	100	New York Transit	.....	July 15, 26	100	12⅜	12⅜	12⅜	12⅜	— ¼
80½	64	100	70	69	56½		2,000,000	50	Northern Pipe Line	$3S.A.	Jan. 2, 29	50	52	52	52	52	—3
67¾	55¾	67⅞	52	84	58½		60,000,000	25	Ohio Oil Co.	50cQ*	Dec. 15, 28	2,500	72⅞	73¾	71⅛	72¼	—1¼
24¾	15	39	12	84	28		10,000,000	25	Penn Mex. Fuel	$1.25	Dec. 15, 28	200	24⅞	25	24⅞	25	.....
220	84½	201½	175½	220	167		4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 28	400	41	41	39¼	39¼	+ ⅛
74½	61½	27¼	15½	19	15		1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	700	20	20	19¾	20	.....
50	34½	41½	35	71⅞	36¾		2,000,000	25	South Penn Oil	50cQ	Dec. 31, 28	1,300	52	53	52	52⅞	+ ⅞
56	47½	83	55½	102	70		3,500,000	100	Southwest Pa. Pipe Lines	$1Q	Oct. 1, 28	No sales.					
70½	60½	81½	64⅝	95⅞	70⅞		228,415,463	25	Standard Oil of Indiana	61½Q	Dec. 15, 28	15,300	55½	56	55¼	55¾	+ ⅜
36½	16½	20⅞	14⅝	37¾	15		8,000,000	25	Standard Oil of Kansas	.....	June 16, 24	1,300	21½	22	21½	21⅝	— ⅜
134⅜	108	130	111½	179¾	122¼		17,012,559	10	Standard Oil of Kentucky	$1Q	Dec. 31, 28	2,300	37½	38	36⅜	37¾	—1⅛
51⅜	42	49½	40	54⅞	39⅞		4,559,850	25	Standard Oil of Nebraska	63cQ	Dec. 20, 28	200	47¼	47¼	47	47	— ⅝
372	288	87½	72	134	71		14,000,000	25	Standard Oil of Ohio	62½cQ	Jan. 2, 29	4,000	123	123	121	121	— ⅜
21	15	21	14½	23½	16		861,000	25	Swan Finch Co.	.....	Nov. 1, 19	600	115	115⅞	114	114	.....
109⅜	90¼	....	....	111	72		125,619,000	25	Vacuum Oil	75cQ	Dec. 20, 28	2,000	115	115⅞	113	114	—1

*Also extras.

FRANK F. SCHAUER IS MADE VICE PRESIDENT

Frank F. Schauer, general manager of the Equitable Gas Co., the Pittsburgh & West Virginia Gas Co. and the Philadelphia Oil Co., has been made vice president also of these three organizations, which are subsidiaries of the Philadelphia company and have their headquarters in Pittsburgh, Pa. Mr. Schauer's connection with this group began in 1920, when he became assistant to the general manager of the Equitable. For 21 years prior to that Mr. Schauer had been in the service of the United Gas Improvement Co., beginning as a street clerk and being advanced from one position to another until at the time of his resignation he was an engineer of distribution for the Syracuse Lighting Co., a U. G. I. subsidiary.

DEATH OF OLIVER AMES

Oliver Ames, senior member of the board of directors of the General Electric Co., died in his home in North Easton, Mass., on June 18. Mr. Ames, 65 years old, had been a member of the board since 1893, being elected at that time to fill the vacancy caused by the death of his father, who previous to the formation of the General Electric Co. was a director of the Thomson-Houston Co. Burial was in North Easton.

SOUTHWEST TEXAS

(Continued from Page 59)

Shell Petroleum Corp.'s No. 2 Dye, J. Hinds Survey, completed 2,683 feet making 100 bbls.

Gulf Production Co.'s No. 13 R. W. Carter, completed 2,687 feet pumping 150 bbls.

Humble Oil & Refining Co.'s No. B-1 Martha Briscoe, completed 2,704 feet pumping.

Humble Oil & Refining Co.'s No. A-3 Martha Briscoe, completed 2,705 feet pumping.

Humble Oil & Refining Co.'s No. 2 C. F. Dye, 300 feet north of No. 1, completed producer at 2,640 feet.

Humble Oil & Refining Co.'s No. 3 Addie Hinds, J. Hinds Survey, completed 2,678 feet pumping.

Humble Oil & Refining Co.'s No. A-3 Johnson, J. Hinds Survey, completed 2,694 feet swabbing 400 bbls.

Humble Oil & Refining Co.'s No. D-1 J. R. Tiller, completed 2,690 feet pumping.

Humble Oil & Refining Co.'s No. 3 T. A. Tiller, completed 2,677 feet pumping, no gauge.

Humble Oil & Refining Co.'s No. C-2 Floy Gray, completed pumping 400 bbls. at 2,678 feet.

Humble Oil & Refining Co.'s No. B-2 J. L. Northcutt, completed 2,696 feet pumping.

Humble Oil & Refining Co.'s No. B-3 Clyant Smith, completed 2,701 feet for 300 bbls.

Humble Oil & Refining Co.'s No. C-2 J. R. Tiller, completed 2,696 feet pumping 580 bbls.

T. C. Hadley's No. 2 Merriwether, A. Floyd Survey, completed 2,742 feet making 30 bbls.

H. J. Powell, trustee, No. 2 Cora Malone, A. Floyd Survey, completed 2,650 feet for 53 bbls. in 13 hours.

Humble Oil & Refining Co.'s No. A-2 Floy Gray, J. Hinds Survey, completed 2,671 feet pumping 725 bbls.

Duval County

O. W. Killam's No. 10 Bruni, Survey 9, Adams Subdivision, completed 2,343 feet for 40,000,000 feet of gas daily.

Refugio County

Sun Oil Co.'s No. 1 Reu, completed 3,655 feet, 1,300 pounds rock pressure, gas volume not estimated.

Houston Gulf Gas Co.'s No. 4 Holmes Heard, completed 3,646 feet, estimated 80,000,000-foot gas well.

Zavala County

Tritex Oil Co.'s No. 5 West, 1,000 feet due west of No. 2, completed 850 feet for 30,000,000 feet of gas.

Zapata County

John Pappas' No. 1 Cuellar, Porcion 33-34, Block 5, completed 1,408 feet gas well, good pressure and small volume.

ABANDONED TESTS

Blanco County

C. W. Bates' No. 1 Merman Massey, dropped as abandoned, test shut down for past 12 months.

Robert Rodson's No. 2 Glasscock, location reported in error.

Brooks County

Milam Drilling Co.'s No. 3 Riley Allen, 40 feet north of No. 1, core test, has been completed and rig moved over for another.

Milam Drilling Co.'s No. 2 Riley Allen, Block 89, core test has been completed at 1,250 feet.

Caldwell County

Humble Oil & Refining Co.'s No. B-1 Floy Gray, abandond at 2,833 feet, rig moved off and casing left in the hole.

Milam County

Rogers & Heep's No. 1 J. B. Duncan, J. J. Acosta Survey, abandoned at 2,111 feet.

Bexar County

Humble Oil & Refining Co.'s No. 2 Oppenheimer, J. M. Urriegas Survey, 300 feet north of No. 1, abandoned at 4,535 feet.

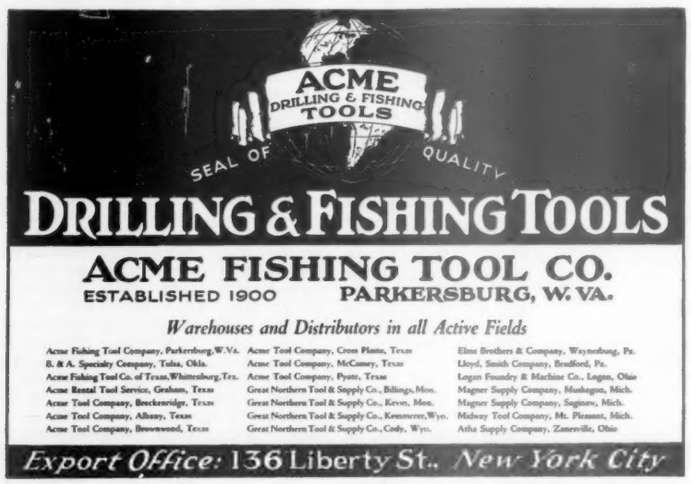
NEW LOCATIONS

Bastrop County

Frank Rundus' No. 1 fee, has resumed drilling at 700 feet after several months' shut-down.

Joe Bruner Field—Caldwell

Tip de Arman's No. 3 G. F. Carter, James Hinds Survey, located 50 feet north and west lines, is location. E. R. Brawn and C. O. Miller's No. 2 R. W. Carter, Gerren Hinds Survey, located 150 feet north and west lines, is derrick. Cranfill & Reynolds' No. 3 Hanson, James Hinds Survey, at 2,735 feet in Edwards; No. 2-A J. L. Northcut, S. Shupe Survey, located 300 feet southwest of No. 1, is location; No. 3 Northcut, at 2,704 feet plugged back from 2,714 feet, running rods and tubing. Forest Oil Co.'s No. 1 M. H. Woods, Isaac Weldon Survey, Block 35, located south central part of lease, is location; No. 1 T. Enriquez, Luling Townsite tract, Block 32, is location; No. 1 Mrs. Moore at 1,495 feet had 3,000,000 feet gas. Gulf Production Co.'s No. 5 J. L. Northcut at 2,670 feet is waiting on pump; No. 6 J. L. Northcut, James Hinds Survey, at 2,678 feet total depth, preparing to install pump; No. 7 J. L. Northcut, James Hinds Survey, at 2,365 feet in chalk; No. 7 W. L. Smith at 2,427 feet in Taylor. T. C. Hadley's No. 1 J. M. Hanson, James Hinds Survey, located 150 feet south and east lines, at 2,640 feet is shut down; No. 3 Merriweather, A. Floyd Survey, at 2,424 feet in Taylor marl. Humble Oill & Refining Co.'s No. 1-B M. Briscoe at 2,704 feet is swabbing; No. 2-B Briscoe, located 206 feet north line, 150 feet west line off "B" lease, at 2,162 feet in Taylor marl; No. 3-A M. Briscoe at 2,705 feet putting on pump; No. 4-A M. Briscoe, located 206 feet north line, 150 feet east line of "A" lease, at 2,179 feet in shale and lime; No. 2 C. F. Dye, located 300 feet north of No. 1 and 300 feet west line, at 2,509 feet is drilling; No. 3 Addie Hinds, James Hinds Survey, at 2,678 feet, set 2,674 feet of 6⅝-inch casing; No. 3-A Johnson, James Hinds Survey, at 2,659 feet is drilling, topped Georgetown at 2,602 feet; No. 3-B Johnson, James Hinds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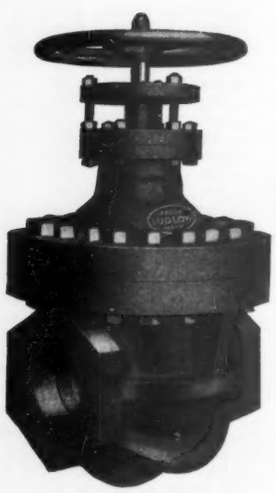

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CATALOG ON REQUEST

TRADE LUDLOW MARK

Survey, located 206 feet south and 150 feet east lines, at 2,356 feet is drilling in chalk, topped at 2,200 feet; No. 8-B Moses & Baggett, S. Schupe Survey at 2,259 feet in Taylor; No. 9-B Moses and Baggett at 2,365 feet in chalk, standing; No. 3-A J. L. Northcut at 2,385 feet in chalk; No. 4-A J. L. Northcut at 2,390 feet is drilling, topped chalk at 2,230 feet; No. 1-B J. L. Northcut at 2,297 feet in chalk, topped at 2,225 feet; No. 2-B Clyant Smith, at 1,744 feet in shale; No. 1-D J. R. Tiller, 150 feet west line, 206 feet north line of "D" lease, at 2,690 feet is preparing to swab, topped Edwards at 2,670 feet; No. 3 T. A. Tiller, located 450 feet north line, 150 feet east line, at 2,677 feet going on pump. Luling Oil & Gas Co.'s No. 1 G. R. Carter, Gerren Hinds Survey, located 150 feet out of northeast corner, at 2,704 feet is rigging up to deepen. Lutex Oil Co.'s No. 6 Wilson, A. Floyd Survey, at 2,714 feet is drilling. Morgan-Duke's No. 2 Cora Malone, A. Floyd Survey, located 300 feet southwest of No. 1, is partially rigged up. Swearingen, trustee's No. 1 Caldwell County Land, James Hinds Survey, at 2,503 feet is shut down due to litigation. Shell Petroleum Corp.'s No. 2 Dye at 2,683 feet is standing with hole full of oil; No. 6 R. W. Malone, A. Floyd Survey, 700 feet south and east lines, is location; No. 2 Clyant Smith, James Hinds Survey, at 2,652 feet is waiting on cement; in Georgetown, lost returns at 2,652 feet. The Texas Company's No. 8 Merriweather at 2,786 feet, total depth, standing, shot casing; No. 9 Merriweather, A. Floyd Survey, 300 feet northeast of No. 7, at 2,716 feet topped Edwards at 2,703 feet. Thurman & Brown's No. 1 Beversdorff, A. Floyd Survey, located 150 feet southeast lines, 131 feet southwest lines, is location.

ROCKY MOUNTAIN AREA

(Continued from Page 66)

the general interest among oil men in that area. The Pipe Springs well, according to these reports, was drilling in very hard dolomite at 4,320 feet, while scouts who have seen the samples express the opinion the hole is bottomed in granite. In any event, the formation appears to be the same as found last year in its No. 1 Mesa, on the Table Mesa Dome, SE NE Section 8-30-50, in Baca County. The Table Mesa well was abandoned at 2,085 feet and it was generally agreed it had encountered the top of the granite ridge that runs through southeastern Colorado, the exact location of which has proved a serious detriment to prospecting. The company then moved the rig 18 miles to the northeast and started the Pipe Springs well last July. It was drilled to 3,987 feet last fall when water shortage caused it to be shut down until a few weeks ago. When operations were resumed, the well which had been drilled to that depth with rotary tools, was standardized. It topped the La Plata at 925 feet and went into the Pennsylvanian lime at 3,710 feet. A fine gray sand carrying biotite was encountered at 3,885 feet, but it was barren of oil, gas or water.

Southeastern Colorado continues to be something of a geological mystery due to an insufficient number of wells being drilled to determine the sub-surface geology over a large area, but a number of companies have been active gathering leases in that area and extensive geophysical surveys are being made. The area under investigation lies mostly north of the Arkansas River for a distance of 125 miles and west of the Kansas line for a distance of about 50 miles. Considerably to the north of this district, in Yuma County, just west of the Kansas line, two wildcats are being drilled which are scheduled for Pennsylvanian tests and are to be put down to a depth of 5,500 feet, if necessary. One is the Phillips Petroleum Co.'s No. 1 Andrews, SW NW NW Section 3-2s-42, on the Rosenkranz structure, drilling below 1,100 feet, and the other is the Major Petroleum, Inc., No. 1-A Winegar, SW SE NW Section 7-2s-43, drilling below 810 feet. The latter ran into a pocket of non-inflammable gas at 700 feet. Another well drilling in this general area, but farther to the west is the Kelly Oil Co.'s No. 1 State, SE cor. NW Section 36-14s-57, in Lincoln County. This well, while not located on a structure in the opinion of several geologists who have visited it, has reported shows of oil and gas on several occasions. The latest report is that it is drilling at 1,940 feet in shale and showing quite a little gas with a slight show of oil continuing. The hole, apparently, has not yet reached the Dakota.

Larimer County

The Five Square Oil Co.'s No. 1-A State, SW cor. Section 16-4n-69, on the Berthoud structure in Larimer County, one of the front range domes which was drilled by the Midwest Refining Co. in 1924, has shown no change since last report except the quantity of oil has increased. The hole is bottomed at 3,730 feet in the top of the Dakota formation and has 1,200 feet of oil standing in it. It is making considerable gas and during the past week the accumulated pressure caused the hole to clean itself. Drilling has been delayed by the tools being lost. Fishing tools ordered from Wyoming failed to recover the bit and a special tool is being made. The depth is approximately the same as that at which the Midwest well, half a mile to the north, was estimated good for 10 bbls. of oil and 3,000,000 feet of gas a day. Another wildcat in Larimer County which has been drilling for a long time is the Poudre River Oil Co.'s No. 1 Warren, NE cor. Section 33-8n-69, northwest of Fort Collins. No new hole has been made for quite a while due to difficulties of one kind and another. It is bottomed at 3,599 feet in the Pennsylvanian. Recently the 4¾-inch casing was underreamed and lowered from 2,700 to 3,400 feet for a water shutoff. This appeared to be successful and a show of oil made its appearance at the bottom of the hole, but before any new depth was made the tools stuck about half way up. The tools are attached to the cable and fishing is to be resumed after being idle for several weeks. The only other active operations in Larimer County are on the Wellington Dome where the Continental Oil Co.'s No. 4 Scott, NE SE Section 6-9n-68, is moving in material, and its No. 1 Fleming, SE NW Section 6-9-68, is drilling at 3,625 feet.

In Arapahoe County, the McDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, is drilling below 3,700 feet with the 8¼-inch at 3,660 feet.

In Jefferson County, the Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor. Section 24-4s-69, near Denver, cemented the 6¼-inch at 3,175 feet and is preparing to resume.

In Pueblo County, the Utah Oil Corp.'s No. 1, Section 10-22-64, five miles west of the recent Vineland operation, commenced spudding June 13. It will go to the red beds.

In Fremont County, W. M. Conley's No. 6, SE Section 21-20-69, in the south extension of the Florence Pool, is a completion at 1,930 feet. While it made 5 bbls. an hour at the start, it is expected to settle to about 25 bbls.

Routt County

In Routt County, in the northwestern part of the state, the Texas Production Co.'s No. 1 State-Oliver, NE SW Section 18-6n-86, on the Tow Creek Dome, was plugged and abandoned at 3,500 feet. The same company's No. 4 Belle Dennis, NE SE Section 7-6-86, a test to the Sundance, which has never been drilled on Tow Creek, is shut down at 5,110 feet. It is several hundred feet deeper than it was expected it would have to go and probably is below the Sundance. The Midwest Refining Co.'s No. 10 Chura, NW NE NW Section 4-7n-86, on the Chimney Creek Dome, north of Tow Creek, a Sundance test, has rig completed.

In Moffat County, the Texas Production Co.'s No. 36 Lloyd, SE cor. Section 21-4n-92, southwestern side of Iles Dome, is bottomed at 3,640 feet after plugging back and shooting a sand in the Morrison, and is rigging up to clean out. The Midwest Refining Co.'s No. 24-SD Parkinson, NE SE NW Section 22-4-92, has been plugged back an additional 2 feet to 3,562 feet to shut off bottom water. This will give it 2 feet of Sundance sand showing saturation which will be tested in an effort to make a producer out of it. Thomas McLaughlin, and others' No. 1 Williams, NW SW Section 2-3n-92, testing the fault area south of the Iles Dome, is drilling at 3,673 feet in black shale, with the 8¼-inch at 3,645 feet. It is getting rather deep as it has not yet reached the Dakota. The Texas Production Co.'s No. 1 Berlin, SW NE Section 19-12n-100, Bartram Dome, is drilling at 675 feet.

Rio Blanco County

In Rio Blanco County, the White Eagle Oil & Refining Co.'s No. 1-A Fordham, NW SW Section 9-2s-96, Picenace Creek, is drilling at 1,080 feet. Just above this horizon it encounters a bed of maltha, a bituminous substance resembling asphalt or gilsonite. Gilsonite is mined extensively in the area northwest of this well and is shipped east in large quantities where there is a good market for it. The Texas Production Co.'s No. 1 Potter, C NE SW Section 30-2n-96, White River structure, is drilling at 92 feet.

In Delta County, the Crawford Oil & Gas Co. is moving a rig to the SW SE Section 32-28s-91, for a test of the Needle Rock structure near the town of Crawford.

In Jackson County, the Midwest Refining Co.'s No. 21-X Rich, SW NW Section 9-6n-80, Buffalo Creek, is drilling at 320 feet in brown shale.

The Mountain Fuel Supply Co.'s No. 1 State-Reiter-Foster, SE cor. Section 16-12n-100, Hiawatha Dome, in Moffat County, which was completed recently at 3,585 feet with an estimated flow of 1,000,000 feet of gas, gauged better than 3,000,000 feet with a rock pressure of 1,200 pounds upon being tested.

WYOMING

The Black Mountain Field which straddles the line between Hot Springs and Washakie Counties in the Big Horn Basin in Wyoming is to be opened for a sustained production test of the five or six wells which have been drilled by the Utah Oil Refining Co. The wells were drilled in 1927 and 1928 and shut in. It is estimated that the production, which is a heavy black oil, will run at around 1,800 bbls. a day. Refinery tests of the crude also will be made. The object is to determine whether a pipe line from the field shall be constructed. The field is about 30 miles east of Thermopolis. The field is in Townships 42 and 43 north, ranges 90 and 91 west. One test drilled in 1927 went to the Amsden at 3,832 feet. The production comes from the Embar and Tensleep.

Drilling operations in Wyoming this week developed little of interest. The Prairie Oil & Gas Co.'s No. 1 Baird, NE cor. SW Section 22-31-81, in Natrona County, on the Clark Dome, 20 miles southwest of Casper, continues to attract attention though there have been no new developments since it was reported to have gas in the top of the second Wall Creek. The gas was found at 750-85 feet and gauged 2,000,000 feet. The 10-inch is to be cemented below the Wall Creek series and the Sundance, the horizon which is producing oil at Spindletop and Bolton Creek, in the same district, is expected at around 2,100 feet. This area, generally referred to as the Bates Hole district, is receiving considerable attention from geologists. There is a general line of folding running through the area upon which a number of prospects have been drilled. Several of the local highs have been found productive. The Kinney-Coastal Oil Co. has a pipe line running from Bolton Creek to Casper which passes within less than a mile of the Prairie well.

Park County

In Park County, the Producers & Refiners Corp.'s No. 1 Rand, SE NW Section 7-57-97, on the Sage Creek Dome, just southeast of Frannie, is bottomed in lime at 2,680 feet and waiting for a packer. This well is at an interesting stage and its fate soon will be known. Same company's No. 1 Hill, NE SE of Section 7-57-97, is shut down at 597 feet at which depth the 15½-inch was cemented. The California Exploration Co.'s No. 2, NW NE Section 14-48-102, Pitchfork structure, is drilling at 640 feet in a 20-inch hole. The Midwest Refining Co.'s No. 36 Rosenberg, SE cor. NW Section 25-58-98, Frannie Dome, is drilling at 2,735 feet in gray lime with the hole full of water. While this well is north of the south fault that traverses the structure in an east-west direction, it apparently drilled through the fault and reached the top of the Embar lime at 2,460 feet on the south side. In Big Horn County, the Producers & Refiners' No. 3, NW NW Section 24-56-98, on the Garland Dome, joint with the Kinney-Coastal Oil Co., is drilling at 3,185 feet in shale. The top of the Sundance formation was reached at 3,026 feet and the bottom is expected at around 3,400 feet. It is showing some gas through the mud in the hole. The Ohio Oil Co.'s No. 1 Easton, Section 33-56-97, Byron Dome, is drilling at 1,851 feet.

In Lincoln County, the Midwest Refining Co.'s No. 1 Waterfall, SE SW Section 35-22-115, is drilling at 3,408 feet in hard broken lime and gray shale, and its No. 1 Little Greys River, SE Section 25-37-117, is drilling below 800 feet in lower Jurrasic sediments.

In Sweetwater County, the Producers & Refiners' No. 1, NE SE Section 26-20-104, North Baxter Basin, joint with the Marland Oil Co., is shut down at 4,100 feet. This well had some gas in what was supposedly the Lakota sand at 3,500 feet and drilling was continued with the Sundance as the objective. The Mountain Fuel Supply Co.'s No. 1 Otto Arnold, NE Section 24-19-104, Middle Baxter Basin, is drilling at 3,130 feet and is believed to be close to the Sundance. It was dry in the Muddy series but had some water in a stray sand above the Dakota. Same company's No. 1 Humphreys, SW NE Section 2-12-101, Canon Creek, is drilling at 3,785 feet, and its No. 1 Newberry, SE cor. Section 13-12-100, cemented the 12½-inch at 1,460 feet.

Carbon County

In Carbon County, the Producers & Refiners' No. 3, SE NW Section 2-19-88, Hatfield Dome, is bottomed at 4,003 feet and drilling on iron at 3,924 feet, and its No. 1 Sherrard, NE NE Section 14-25-89, is drilling at 3,248 feet in hard lime. Same company's No. 7, Section 7-26-89, Wertz Dome, is drilling at 3,605 feet in blue shale, and its No. 8, on the same section, is drilling out cement at a total depth of 3,718 feet.

In Fremont County, the Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW Section 22-3n-1w, Pilot Butte, is bottomed at 2,635 feet and underreaming the 10-inch at 2,600 feet. The Producers & Refiners' No. 2 Muskrat, SE NW Section 33-34-92, is drilling at 135 feet with the 20-inch at 50 feet, and the Texas Production Co.'s No. 1 State, SW SW Section 36-34-95, Alkali Butte, is rigged and waiting for contractor's crew.

IDAHO

The California Co.'s No. 1 Sorenson, NW SW Section 33-3n-41, Meadow Creek Dome, Bonneville County, is cleaning out after third attempt to shut off water. The 10-inch has been lowered to 3,000 feet where another effort to cement is being made. The hole is bottomed in the Thaynes formation of the lower Triassic. Leases call for a 5,000-foot test, but company probably will drill to 6,000 feet, if necessary. The Grand Teton Oil Co.'s No. 1 Blevins, SW Section 33-5n-44, Horseshoe structure, Teton County, is drilling at 517 feet in blue shale of the Frontier, with a slight show of gas.

MONTANA

The royalty obtained by Montana from state-owned lands during the past year to December 31, 1928, amounted to $147,777 and it looks as though 1929 will exceed the past year. For the first five months of 1929, the State's income from royalty oil in the various fields amounted to $58,475. There is a slight decrease noticeable in the royalty income from the Kevin Sunburst Field, but this is counteracted by the increase of income from

Pondera Field. It is expected that Banatyne will go on production this year and this will add a new field to the State of Montana.

Two new wells were brought in in the Sunburst Field of northern Montana the past week. The Sweeney Oil Co. on the Maughns lease, Section 29-35-1, found a showing in the Ellis sand at 1,535 feet and shot with 80 quarts the well will do around 150 bbls.

The P. M. K. Oil Co. has a nominal pumper on Section 29-35-1, in the Ellis sand at 1,522 feet. This well is inside the known development.

Announcement was made the past week that L. W. Hill, son of the famous railroad builder of the Northwest, who is interested in the Sunburst area, will put down five wells the coming summer on his holdings. Mr. Hill is chairman of the board of the Great Northern Railroad and has been much interested in the development of the Sunburst Field, especially since the Great Northern Railroad has closed down many of its coal mines and is now burning fuel oil, most of this oil coming from the Sunburst Field.

The Carter Oil Co. is starting a wildcat on the Sixshooter structure about 20 miles north of the Lake Basin Field in Section 17-2-19; cable tools will be used and the hole is to start with 24-inch bit. The rail point will be Rapelje, about 9 miles east of the location. The hole is expected to go to 4,000 feet.

In Liberty County, Section 36-28-6, the Cypress Oil Co. has a gas showing that is much like the discovery well at Pondera. This Cypress well found the Ellis dry and a few feet lower, at 2,695 feet, the well started to flow gas. The hole bridged and is now waiting equipment and to set casing before drilling out this bridge.

On Section 5-25-1, in the Banatyne Field, the Hardrock Oil Co. has reported a completion good for 25 bbls. This is about the largest well yet found in this field. There are three other strings of tools active there.

ROCKY MOUNTAIN FIELDS
Daily Average Pipe Line Runs Week Ending June 22

WYOMING

Salt Creek	27,280
Frannie	40
Big Muddy	2,250
Oregon Basin	4,300
Byron	.....
Dutton	30
Elk Basin	780
Ferris	.....
Grass Creek	2,240
Greybull	.....
Hamilton	1,000
LaBarge	2,080
Lance Creek	230
Lost Soldier	4,060
Osage	560
Poison Spider	1,480
Rock River	2,260
Rex Lake	100
Lander	360
Simpson Ridge	60
Teapot Dome	30
Mule Creek	910
Total	50,050

MONTANA

Cat Creek	1,440
Kevin-Sunburst	6,860
Pondera	3,170
Lake Basin	90
Total	11,560

COLORADO

Moffat	1,322
Fort Collins	2,477
Florence	882
Iles	1,778
Tow Creek	436
Boulder	25
Rangely	100
Total	7,020

NEW MEXICO

Artesia	921
Cap Rock (Maljamar)	403
Hogback	180
Rattlesnake	111
Table Mesa	.....
Total	1,615
Grand total	70,245

PANHANDLE FIELDS

(Continued from Page 74)

629-37 feet. Panhandle Refining Co.'s No. 1 Morrison was dry and abandoned at 4,405 feet. Schermerhorn Oil & Gas Co.'s No. 5 Thompson was shot with 80 quarts at 2,057-74 feet, drilled to a total depth of 2,084 feet and had an initial production of 5 bbls.

Wilbarger County

Staley Wynee & Co.'s No. 7 Waggoner made 85 bbls. at 2,414-24 feet. Their No. 1 Waggoner was dry and abandoned at 1,898 feet. The Texas Company's No. 363 Waggoner was dry and abandoned at 575 feet. Wilbarger Oil Co.'s No. 3 Waggoner had an initial production of 18 bbls. at 1,879-86 feet and at 1,955-57 feet.

PANHANDLE COMPLETIONS
Week Ended June 22
Carson County

Marland Oil Co.'s No. 1-L Burnett, located 440 feet south and 1,320 feet northwest NE cor. Section 79, Block 4, I.&G.N.R.R. Survey, was drilled to a total depth of 3,180 feet, plugged back to 2,640 feet, and made 80,000,000 feet of gas from 1.825-2,640 feet.

Gray County

B. S. Arnold's No. 1 J. E. Mongole was drilled to a total depth of 2,690 feet, made 37,000,000 feet of gas at 2,688-90 feet; first gas was found at 2,495 feet. Danciger Oil & Refining Co.'s No. 1 H. K. Beck, located in Section 28, Block B-2, H.&G.N.R.R. Survey, had an initial production of 95 bbls. at 2,869-75 feet. The location was abandoned on Gardner Brothers & Collins' No. 2 Saunders. The Shamrock Co.'s No. 3 Clayton had an initial production of 1,000 bbls. at 2,834-46 feet. The Texas Company's No. 2 Chapman had an initial production of 56 bbls. at 2,672-2,735 feet and was drilled to a total depth of 2,902 feet. Gulf Production Co.'s No. 7-B Bowers, located 990 feet north and 330 feet west of southeast of 160-acre lease, Section 89, Block B-2, H.&G.N.R.R. Survey, had an initial production of 1,255 bbls. in 24 hours at 2,755-3,004 feet.

Wheeler County

L. W. Rooks' No. 2-A Smock, located C SW SE Section 5, Block 24, H.&G.N. R.R. Survey, location was abandoned.

RANGER COMPLETIONS
Week ending June 22
Brown County

Baker Brothers' No. 1 White heirs had an initial production of 50 bbls. at 1,133-51 feet. Bowers and others' No. 4 Cason was dry and abandoned at 1,554 feet. Campbell and others' No. 2 Turner was dry and abandoned at 800 feet. Curry's No. 4 Chambers was shot with 5 quarts at 1,319-25 feet, drilled to a total depth of 1,334 feet and had an initial production of 3 bbls. Green Production Co.'s No. 1 McCulley topped the pay at 830 feet, was drilled to a total depth of 831½ feet and had an initial production of 1,-000,000 feet of gas. The location was abandoned on Ditto Oil Co.'s No. 5 Richardson. Green & Co. and others' No. 1 Barnes was dry and abandoned at 906 feet. Lloyd Oil Corp.'s No. 1-A Collier was dry and abandoned at 1,481 feet. Windsor and others' No. 1 Thomas was dry and abandoned at 668 feet.

Callahan County

Mook-Texas and others' No. 1 Aiken and others was dry and abandoned at 1,-812 feet.

Coleman County

Eastland Oil Co. and others' No. 1 Keeney-A was drilled to a total depth of 2,002 feet, topped the pay at 1,992-99 feet and had an initial production of 590 bbls. Eastland Oil Co. and Shell Petroleum Corp.'s No. 1 Keeney-B was dry and abandoned at 2,025 feet. Vacuum Oil Co.'s No. 1 Bennett had an initial production of 40 bbls. at 1,789-1,814 feet. Atlantic Oil Production Co. and Midsun Oil Corp.'s No. 1 Monehan was dry and abandoned at 2,282 feet. Chapman and others' No. 3 Fuller, Sr., was dry and abandoned at 1,607 feet. Humphrey Brothers and Union Oil Co.'s No. 1 Sanger Brothers was drilled to a total depth of 1,762 feet, plugged back to 1,-215 feet, topped the pay at 1,175-88 feet and had an initial production of 2,000,000 feet of gas. Stepp & Keister's No. 4 Shore was dry and abandoned at 995 feet.

Eastland County

The Texas Company and Hoffer's No. 1 Gray had an initial production of 816 bbls. at 3,451-57 feet. Root and others' No. 1 Hard was deepened from 3,245 feet to 3,640 feet, shot with 95 quarts from 3,380-3,430 feet with no results, plugged back to 3,250 feet and had an initial production of 50,000 feet of gas.

Hood County

Simpson Oil Co.'s No. 1 Juliff had an oil show at 2,482-2,622 feet and was dry and abandoned at 2,640 feet.

Shackelford County

Dull & Earl's No. 8 Matthews had an initial production of 50 bbls. at 1,147-65 feet. Hughes' No. 4 Dillar Brothers was dry and abandoned at 805 feet. Midwest Exploration Co.'s No. 5 Dyer was dry and abandoned at 922 feet. Oyster & Rife's No. 1 Davis had an initial production of 35 bbls. at 1,606-10 feet and was drilled to a total depth of 1,614 feet. Roeser & Pendleton and Marland's No. 12-A-83 Cook had an initial production of 75 bbls. at 1,391-1,400 feet. Their No. 2 Titus-B had an initial production of 20 bbls. at 606-618 feet. Their No. 3-B Titus had an initial production of 25 bbls. at 590-606 feet. Slicker Homer's No. 3 Matthews had an oil show at 1,-057-73 feet and was dry and abandoned at 1,195 feet. Tannehill and others' No. 4 Hill was dry and abandoned at 711 feet. Vacuum Oil Co.'s No. 1 Matthews-B location was abandoned. Wade's No. 1 Lannon was dry and abandoned at 653 feet. Wells and others' No. 1 Davis was dry and abandoned at 830 feet.

HOOVER STANDING PAT ON HIS POLICY

(Continued from Page 42)

servation measures were specified under two forms of bills, one, permissive and the other mandatory. The mandatory feature provided that recommendations should be put into effect by the commission to be empowered for that purpose.

Requa's Remark

In all the legislation that has been proposed the restrictions relate to production in an oil field which doubtless is as far as any interstate compact can apply. This limitation does not appear to have been in the mind of Mark L. Requa, chairman of the Colorado Springs Petroleum Conference, when he made his opening remark and said:

"Conservation, therefore, takes cognizance of balanced and intelligent production, manufacture, distribution and use and aims to bring about the greatest good to the greatest number and that for the longest possible period of time."

Of course when oil is produced it becomes personal property and conservation methods can no more apply to it than they could apply to any other personal property in the country. Its "manufacture, distribution and use" would be subject to the same law as is applied to any other commodity. The law has never undertaken to place restrictions on owners of commodities "to bring about the greatest good to the greatest number and that for the longest possible period of time." Wise business management would have to deal with problems of that kind.

TEXAS DELEGATES REPORT

AUSTIN, Tex., June 22.—The Texas delegates to the Oil Conservation Conference at Colorado Springs, M. M. Crane, C. V. Terrell and C. L. McCartney, in their report to Gov. Dan Moody say:

"Some of the suggestions proposed, if carried into practical effect, would necessarily call for a partial modification of existing antitrust laws, both state and federal, matters which must address themselves to the national Congress and the legislatures of the respective states concerned.

"Again, some of these suggestions, as we understand them, in order to effectively function, would, as proposed necessarily enlist the activities of federal and other outside agencies, and it was and is our opoinion that the people of Texas would be slow to surrender, if not totally averse to surrendering any part of their complete freedom of action in dealing with the conservation of their natural resources. . . .

"It would be well to preserve untrammeled freedom of action on the part of our own State in the wise development and just utilization of its petroleum products, keeping in view its own as well as wider public interests. . . .

"In all such matters we apprehend no state should or would limit the zone of its own sovereignty or subordinate its own interests to that of another."

NEW MEXICO TO HOOVER

SANTA FE, N. Mex., June 22.—A petition to President Hoover and Secretary Wilbur for modification of the recent oil conservation policy to permit exploitation in New Mexico has been sent to Washington, signed by Lieut.-Gov. Hugh B. Woodward, Francis C. Wilson, Herman R. Crile, B. C. Mossman and G. C. Staley, members of the New Mexico delegation to the Colorado Springs conference.

EXPOSITION EXHIBITS WILL COVER ALL PHASES

(Continued from Page 42)

ternational Derrick & Equipment Co., Columbus, Ohio.

Jensen Brothers Manufacturing Co., Coffeyville, Kans.; Jones, S. M., Co., Toledo, Ohio.

Kellogg Switchboard Supply Co., Chicago, Ill.; Kemper Thomas, Cincinnati, Ohio; Keystone Driller Co., Joplin, Mo.

Larkin Packer Co., Tulsa; Leeds & Northrup Co., Philadelphia, Pa.; Linde Air Products Co., New York, N. Y.; Lufkin Foundry & Machine Co., Tulsa; Lunkenheimer Co., Cincinnati, Ohio; Link-Belt Co., Indianapolis, Ind.

McAlear Manufacturing Co., Chicago, Ill.; McEverlast, Inc., Los Angeles, Calif.

MacClatchie Manufacturing Co., Compton, Calif.; Magneto Ignition Corp., Tulsa; Maloney Tank Co., Tulsa; Marion Machine & Foundry Co., Tulsa; Medart Co., St. Louis, Mo.; Merco-Nordstrom Valve Co., New Orleans, La.; Midwest Piping & Supply Co., St. Louis, Mo.; Midland Chamber of Commerce, Midland, Tex.; Mid-Continent Petroleum Corp., Tulsa; Miller Improved Gas Engine Co., Springfield, Ohio; Mine Safety Appliance Co., Pittsburgh, Pa.; Modern Engineering Co., St. Louis, Mo.; Moore, Lee C., Inc., Tulsa.

National Tank Co., Tulsa: National Tube Co., Pittsburgh, Pa.; Naylor Pipe Co., Chicago, Ill.; Norris Brothers, Inc., Tulsa; Norval Motor Corp., Tulsa.

Oakite Products, Inc., New York, N. Y.; O'Bannon, Walter, Co., Tulsa; O. C. S. Manufacturing Co., Coffeyville, Kans.; Oil Conservation Engineering Co., Cleveland, Ohio; Oil Well Improvements Co., Tulsa; Oklahoma Iron Works, Tulsa; Oklahoma Steel Castings Co., Tulsa; The Oil and Gas Journal, Tulsa.

Parkersburg Rig & Reel Co., Parkersburg, W. Va.; Peerless Supply Co., Tulsa; Permutit Co., Kansas City, Mo.; Petroleum Chemical Co., Tulsa; Pittsburgh Equitable Meter Co., Tulsa; Pittsburgh Steel Products Co., Pittsburgh, Pa.; P. L. & M. Co., Los Angeles, Calif.; Powell, William., Co., Cincinnati, Ohio; Prairie Oil & Gas Co., Tulsa; Pratt & Whitney Co., Hartford, Conn.; Progressive Brass Manufacturing Co., Tulsa; Protective Metals, Inc., Tulsa; Pyle-National Co., Chicago, Ill.

Refinery Supply Co., Tulsa; Regal Sales Co., Dallas, Tex.; Robinson Packer Co., Tulsa.

San Angelo Board of City Development, San Angelo, Tex.; Sharpesville Tank & Oil Equipment, Sharpesville, Pa.; Shell Petroleum Corp., Tulsa; Shelton Machinery Corp., New York, N. Y.; Sherwin Williams Co., Tulsa; Sivyer Steel Castings Co., Milwaukee, Wis.; Skelly Oil Co., Tulsa; Smallamatic, Tulsa; Smith Separator Co., Tulsa; Sonner Burner Co., Winfield, Kans.; Southwestern Engineering Corp., Los Angeles, Calif.; Spang-Chalfant & Co., Inc., Pittsburgh, Pa.; Spartan Aircraft Co., Tulsa; Standard Steel Works, North Kansas City, Mo.; Star Drilling Machine Co., Chanute, Kans.; Stockham Pipe & Fittings Co., Birmingham, Ala.; Stoody Products Co., Whittier, Calif.; Sun Oil Co., Tulsa.

Tagliabue, C. J., Manufacturing Co., Brooklyn, N. Y.; Taylor Forge & Pipe Works, Chicago, Ill.; Taylor Instrument Co., Rochester, N. Y.; Templeton Kenly

& Co., Chicago, Ill.; Texas Oil Co., Houston, Tex.; Timken Roller Bearing Co., Canton, Ohio; Transcontinental Oil Co., Tulsa; Trimont Manufacturing Co., Inc., Boston, Mass.; Tulsa Boiler & Machine Works, Tulsa; Twin Disc Clutch Co., Racine, Wis.

Union Wire Rope Co., Tulsa.

Victaulic Co. of America, New York, N. Y.; Victor Welding Equipment Co., San Francisco, Calif.; Vinson Cantor Co., Tulsa.

Wailes Dove-Hermiston Corp., Tulsa; Walworth Co., Boston, Mass.; Waukesha Motors Corp., Waukesha, Wis.; Welders Supply Co., Tulsa; Wertzberger Derrick Co., Tulsa; Westcott & Greis, Inc., Tulsa; Westinghouse Electric Manufacturing Co., East Pittsburgh, Pa.; Wico Electric Co., Springfield, Mass.; Williams Tool Co., Erie, Pa.; Worthington Machinery Corp., Tulsa.

Young Engine Corp., Canton, Ohio.

Federal Malleable Co., West Alles, Wis.; Halliburton Oil Well Cementing Co., Duncan, Okla.; Westcott Valve Manufacturing Co., East St. Louis, Ill.; C. F. Camp Co., Tulsa; Macwhyte Co., Tulsa; A. O. Smith Corp., Tulsa; E. H. Edwards Co., San Francisco, Calif.; The Texas Company, Houston, Tex.; Ingersoll & Rand, Inc., Tulsa; Industrial Brownhoist Corp., Cleveland, Ohio; Fort Worth Well Machinery & Supply Co., Fort Worth, Tex.; Stefco Steel Co., Tulsa; Bennett Pumps Corp., Tulsa; Scott Two Stroke Motor Co., Kansas City, Mo.; National Petroleum News, Cleveland, Ohio; Baldwin Chain & Manufacturing Co., Worcester, Mass.; Magnus Chemical Co., Garwood, N. J.; Brown Instrument Co., Kansas City, Mo.; Oklahoma Natural Gas Co., Tulsa; Podbielniak-Riagorodsky, Tulsa.

Oil Well Supply Co., Tulsa; Clark Machinery Corp., Wichita Falls, Tex.; De Walt Products Corp., Leola, Pa., Lancaster County; Muskogee Iron Works, Muskogee, Okla.

EFFECTS OF SPEED ON PUMP OPERATIONS

(Continued from Page 41)

closely followed the polished rod stroke corrected for the rod and tubing stretch, and that our actual volumetric efficiency would lie somewhere below three-quarters of the polished rod stroke. Due to slippage by the plunger, the actual value is usually below that indicated by the card. The extent of the rod stretch in proportion to the stroke is plainly shown by the steeply sloping lines at the ends of the stroke. In card No. 3, although the rod stretch line is visible at the beginning of the stroke, at the upper end of the stroke no such line is apparent. This is due to the increased inertia of the upward moving fluid column and rods at the higher speeds. Here we have an actual gain in indicated volumetric efficiency due to the higher speed. In this case, our plunger is probably traveling a distance more nearly equal to the polished rod stroke. At higher speeds, it is unsafe to assume any relation between the actual plunger stroke and polished rod stroke. In card No. 4, the inertia effect of the fluid is so great that it shows a distinct hump in the curve at the beginning of the downstroke.

Comparison of Cards

Comparison of cards Nos. 3 and 4 from another angle show that the rods of card No. 3 are operating under a maximum load of 10,500 pounds and that the stress range between maximum and minimum load (the criterion of rod service from a standpoint of fatigue failure as well as from loosening at the joints), is 7,250 pounds. Card No. 4, on the other hand, shows a maximum stress of 12,500 pounds, and a stress range of 11,000 pounds, an increase in stress range of 3,500 pounds. In many cases, an increase in the range of such an amount will mean the difference between rods continually parting and a string giving long, uinterrupted service.

Referring again to cards Nos. 1 and 2, we see that the stress range in card No. 1 is from 4,500 pounds to 13,500 pounds, or about 9,000 pounds. In card No. 2, the upper limit is the same but the lower limit due to the impact vibrations goes down close to 2,500 pounds, an increase of about 2,000 pounds in stress range due to the higher speed.

Formulae for Calculation

The following formulae are given by the manufacturer for calculation of results obtained by the use of these instruments:

Rod tension at any part of the cycle:

If using calibrated indicator cards, read directly from the scale on the card.

If using plain cards, multiply height from zero pressure line to point on card by calibration coefficient, C.

T—H x C:—200H.

T—Tension in pounds.

H—Height to graph in inches from base line.

C—Calibration coefficient (200).

Horsepower:

Determine average depth of indicator graph. If a planimeter is at hand measure area of closed loop and divide by length of loop.

d—a/1:

d—average depth of loop in inches.

a—area of loop in square inches.

1—length of loop in inches.

If a planimeter is not at hand draw 12 or more equally spaced vertical lines through the loop. Measure depth of loop (from top or upstroke line to bottom of downstroke line) and average these measurments.

Mean Effective Force, F equals average depth of loop times calibration coefficient (200).

F—d x C:—200d

F—Mean effective force in pounds.

d—Average depth of loop in inches.

C—Calibration coefficient (200).

Horsepower equals means effective force times length of stroke at well times number of strokes per minute divided by 396,000.

$$HP = \frac{F \times L \times N}{396{,}000} = \frac{200dLN}{396{,}000} = \frac{dLN}{1980}$$

HP—Horsepower.

F—Mean effective force in pounds.

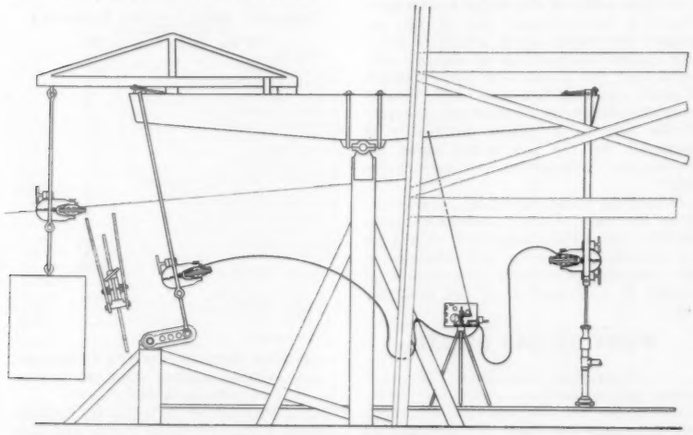
L—Length of stroke in inches.

N—Number of lifting strokes per minute.

Utmost Production

Of course, the criterion in pumping is to get the utmost production from the well at the lowest possible cost. The cost includes not only power, this may be immaterial, but also the expense of maintenance, the cost of renewal parts, and the lost production during down time. Tests made on a large number of wells indicated that many of them were running at excessive speeds and practically the same production was secured at lower speeds with a greatly decreased power and maintenance expense. Too low a speed on the other hand may reduce volumetric efficiency through lost stroke, due to rod stretch and to possible slippage by the plunger. Such cards as Nos. 1 and 2 very plainly bring out the reductions in horsepower possible by lowering the speed. Here actually but very slight difference in oil production was gained by speeding up, yet the power load is increased almost 70 per cent. Aside from this advantage, rapid vibration, such as shown in card No. 2, will speedily loosen up rod joints and increase failure of the pumping string.

No definite statement can be made, however, that will apply to all cases. Each well is a problem in itself. Some wells and equipment operate more efficiently at higher speeds than others. Too high a speed results in trouble. The question is just what is "too high" a speed. Experience has shown that what is high for one well may not be for another. All factors must be considered. Maximum and minimum loads alone do not determine it. Mechanical troubles, such as delayed valve action, plunger slippage, gas lock, viscosity of the fluid, counterbalance, and other independent factors, determine the economical speed to use but each and all of them are reflected in the load variation during the stroke, as indicated on a dynamometer card. The best speed, therefore, from all standpoints, may be reflected by a careful study of the manner in which load changes occur during the stroke.



Various uses of dynamometer. Left to right: Counterbalance suspension loads; pitman and crank pin loads; rod loads.

LUBRICATION VITAL IN WIRE ROPE'S LIFE

(Continued from Page 40)

taining it in the proper state of softness and pliability.

The core on new wire rope retains a supply of the original lubricant but, as a further assurance that frictional wear and core deterioration will be kept at a minimum, lubricating the rope just after installation and before putting into service (particularly such ropes as have been kept in storage for some time) is recommended.

It cannot be emphasized too strongly that in order to get longest service from a wire rope the lubricant used must be selected with the class of service in which the rope is used in mind. A lubricant that will prove suitable on a slow-speed derrick cable will not give equal satisfaction if applied to a high-speed mine hoisting rope.

Requisite Qualities of Lubricant

However, there are several qualities that should be possessed by all wire-rope lubricants regardless of rope service, namely: Ability to adhere firmly at all times under the heavy rubbing and scraping action of the wires; ability to penetrate between the strands to the core and to impregnate the hemp center; freedom from acids, alkalies or any other harmful ingredients that might pit or corrode the strands; ability of the film of lubricant to spread, so that the rope can pass freely over the sheaves without danger of the lubricant either coming off or opening up to admit moisture; should not evaporate or harden upon prolonged exposure to the air, nor be affected by moisture or corrosive fumes if the latter are encountered in service.

Wire ropes may be divided into five general classes as follows: (1) Slow speed ropes operating under heavy loads; (2) high speed hoisting ropes; (3) haulage and slope ropes run at high speeds and under heavy loads; (4) general haulage ropes and ropes of lighter duty than those of Class 3; (5) stationary ropes exposed to moisture, corrosive fumes, or spray, etc. Each class demands certain particular qualifications in the lubricant used, which qualifications are not necessarily common to the other classes.

For slow-speed ropes operating under heavy loads (Class 1), such as those used on derricks, dredges, cranes, steam shovels, etc., a lubricant of heavy body and of adequate adhesive characteristics, applied cold, will give satisfactory results. So, too, will a straight petroleum product having a viscosity of 900 to 1,100 seconds at 210 degrees Fahrenheit, applied hot, prove suitable.

High-Speed Hoisting Ropes

For high-speed hoisting ropes (Class 2), such as mine shaft ropes, it is advisable to use a lubricant of relatively low viscosity, possessing great penetrative and adhering qualities, and capable of saturating the rope thoroughly. Where automatic cable lubricating devices are utilized for applying lubricant to such cables a light lubricant with a viscosity of 350 to 500 seconds at 100 degrees Fahrenheit will prove satisfactory. Where application with a brush is required, a lighter lubricant should be used.

For furnace hoists, derrick falls, logging ropes, coal mine slope and shaft ropes, and haulage ropes and other ropes running at high speeds and under heavy loads (Class 3), a mineral oil lubricant having a viscosity of 500 to 800 seconds at 210 degrees Fahrenheit is recommended.

For general haulage ropes and for ropes of lighter duty than those of Class 3, it is advisable to use a mineral oil of a lower viscosity (for example, 200 to 300 seconds at 210 degrees Fahrenheit) than that recommended for lubricating the ropes in Class 3 service. However, there should be no lessening in the adhering, penetrating, or lubricating qualities of the lubricant.

For stationary ropes exposed to moisture, corrosive fumes or spray, etc., either a grease or an oil can be used with equal satisfaction, provided the lubricant adheres to the rope under all conditions of service and forms a suitable protective coating. A straight petroleum product with a viscosity of 900 to 1,100 seconds at 210 degrees Fahrenheit (previously mentioned as being suitable for lubricating the ropes in Class 1 service) will meet this requirement.

Selecting the Lubricant

The following general comments are applicable to the selection of a wire-rope lubricant:

The lubricant should be fluid enough to penetrate the strands and the core, but not so fluid as to run off the rope nor so viscous as merely to cover the rope.

Tar products are not absolutely waterproof, are deficient in lubricating qualities, and, in addition, usually contain tarry acids which tend to corrode the rope, especially in the presence of moisture. Further, such products on exposure to the air eventually harden, crack and peel off the wire strands.

Soap-thickened mineral oils (that is, greases), while they can be made to the same consistency as the average straight mineral wire-rope lubricant, are usually deficient in adhering and penetrating qualities.

The greater the speed of a rope in service, the lower should be the viscosity of the lubricant used on the rope.

Wherever possible, it is best to utilize a thicker, semi-plastic lubricant and to apply it hot in a thinned condition, rather than to apply cold a more fluid lubricant. Where field conditions are such that cold application only is practical, then a chemically neutral rope lubricant should be used. Do not use crude oil, since, in most cases, it is chemically injurious to the core and steel in the rope.

Where the rope must function under excessive abrasive conditions, such as in sand and gravel quarries, select a lubricant having high surface-protective ability in addition to lubricating, adhering and penetrating qualities.

Application of Lubricant

Selecting a wire-rope lubricant with

care means little, unless the lubricant chosen be judiciously applied.

As previously mentioned, applying the lubricant hot is recommended practice, for thereby the compound will penetrate and then cool to a plastic filler, thus preventing the entrance of water and serving to preserve and to lubricate the inner wires and core. This can best be done by slowly passing the rope through a heated bath of the oil.

Another method, which is wasteful of lubricant and therefore is recommended only when conditions are such that immersion is impracticable, consists in placing a drum of the lubricant, warmed by a steam-heating coil within the drum, above the rope and then allowing the lubricant to run out onto the rope through a suitable outlet valve. A brush for spreading should be placed, with bristles up, below the flow of lubricant and in adjustable contact with the rope. Under no conditions is hand application of lubricant to wire rope entirely satisfactory, but it is better than no lubrication at all.

In applying lubricant by hand, several methods are in use. In all of them best results are obtained if a piece of sheepskin, wool side turned in, is employed; otherwise, a bunch of waste. These methods are feasible only when the rope can be sufficiently slowed down.

Vertical and Inclined Ropes

In the case of vertical and inclined ropes, lubrication can be accomplished by permitting the rope to move slowly through lubricant-soaked waste or sheepskin, which can be either held in the hands of the workmen or bound in place.

With horizontal ropes, in slow motion, the lubricant can be poured with a dipper over the rope, catching the excess in a bucket beneath, and "working in" with sheepskin or waste placed back of the point where the lubricant is poured on. Another method consists in having the rope pass through a V-shaped wooden trough located on the ground, pouring the hot lubricant on the rope, and wiping off the excess with a bunch of waste held near the front of the trough.

Hand application of lubricant to wire rope at best is a messy job and if there is much rope to be lubricated or lubrication at frequent intervals is necessary, it is advisable to use special appliances (which can be readily made), whereby messiness and waste of lubricant will be eliminated. In designing such devices, it should be borne in mind that, if at all possible, it is more practical and economical to lubricate a rope without removing it from service. The accompanying illustration shows how such devices may be built.

Frequency of Lubrication

Although all wire ropes, unless otherwise specified, are lubricated and impregnated in the manufacturing process with a compound that will protect the rope both internally and externally to a maximum degree and will minimize rust or corrosion until the rope is put into service, attention is again called to the fact that this initial lubrication is not permanent; therefore, the rope should be lubricated after installation and before being used, more especially so if it has been in storage for a year or more.

Thereafter, the frequency of lubrication will depend upon service conditions. So long as the rope is pliable and shows evidence of lubricant in the crevices between strands, it does not require such frequent lubrication. In general, the heavier the duty, the higher the operating speeds, the greater the number of small bends, or the more deteriorating the atmospheric or fluid conditions, the more frequently should lubricant be applied.

A wire rope that is to be taken out of service and stored should be well lubricated, and the outer surfaces given a thorough protective coating before being put away.

Remember that it is just as feasible to expect the average automobile engine to function without oil and without damage to the engine as to expect a wire rope to have a long life without the use of a carefully selected lubricant, properly applied.

PETROLEUM EXCHANGE AGAIN DISCUSSED

(Continued from Page 44)

large proportions. Shifting demand and changing market supply operate to make the constant oscillation in prices. It is shifting demand, coupled with the fact that supplies can never be estimated with exactness, that causes oscillations in the prices of commodities.

"The futures contract may call for a delivery of units of the commodity many months hence. Consequently, the commodity must be capable of being stored in times of glut to meet requirements of the market in times of scarcity. A commodity subject to rapid deterioration does not meet this requirement. The dealer who makes a contract to deliver the commodity months hence, having the commodity in store at the time he makes the contract, must have assurance that it will remain unchanged in quality until the delivery date. The commodity should lend itself to the warehouse's economic function of providing time utility, and the supply of the present should be capable of continuing as the supply of the future."

Relation to Distribution

The relationship of a futures exchange to existing channels of distribution is a question of vital interest to the industry. A futures market does not replace any existing mechanism of the market nor does it form a direct link in the chain of distribution. Commodities which are dealt in on organized exchanges flow to market in their accustomed channels. The primary function of a petroleum exchange, Mr. Baer pointed out to The Oil and Gas Journal representative, is not to serve as a market for deliveries of the commodity, but as a market where all those who are exposed to the risk of loss through changes in the price of crude or refined products may obtain protection against this hazard. The exchange would thus not be a primary market but an auxiliary market. In commodity trades where exchanges function they do not affect distributive methods, but they introduce facilities for insurance which would otherwise be unavailable. This insurance is provided by use of the futures markets for hedging transactions made in the normal course of trade.

The principles of hedging are set forth in detail in "Commodity Exchanges." The following brief excerpts illustrate the insurance phase of commodity exchanges:

"The whole purpose of hedging transactions is to remove risk or to minimize risk. It is this purpose which has caused the hedge to be likened to insurance. Business men are careful to insure against such casualties as fire, employes' liability, explosion, and other contingencies which, while possibly remote, contain the possibility of great loss to anyone who suffers the casualty. The risk inherent in price change is a less remote and sometimes more devastating risk than any of those properly defined as casualties. The profits of both dealer and manufacturer are affected by price changes in two markets. The dealer buys from the producer, and the manufacturer buys from the dealer; both are purchasing in producers' markets, and both are selling in consumers' markets.

Purpose of the Hedge

"The hedge is used to insure dealer or manufacturer against loss due to price changes in commodities. Its purpose is to insure his profit or commission, it being always an integral part of the business transaction in which it is employed. Its object is not to return a speculative profit for the reason that any profit derived on the futures merely equalizes or offsets a loss which has been incurred on a cash transaction. The cash trade and the futures trade are complementary.

"There are two broad divisions of manufacturers and dealers who employ the hedge for protection. First, those who are buyers or owners of the commodity; second, those who have entered into contracts for the forward sale of the commodity or a product manufactured therefrom, and who at the time of making the contract do not own the commodity to be delivered or necessary for the manufacture of the goods. The hedge is employed by both classes for the same purpose; the procedure is merely reversed to fit the case. The owner of a commodity is 'long' of the physical grain or cotton or rubber. He obtains his protection by a short sale of an equivalent amount in the futures market. The dealer who contracts ahead, or the spinner or miller who contracts ahead for the sale of a commodity or its products prior to ownership, is 'short' in the trade market. He protects his position by the purchase of a futures contract on an organized exchange for an equivalent amount.

"In the first class are the various elevators in the grain trade which buy wheat from the farmer and forward it to the terminal market for sale, and the cotton merchant who buys cotton from the growers or who accumulates a stock of cotton for merchandising or manufacturing purposes. In the second class are flour millers, exporters, cotton spinners and local shippers.

Value of Hedges

"It is true in the commodity trades, as in the mercantile community at large, that the character and financial soundness of the borrower are of prime importance; but granted these essentials are satisfactorily met, the borrower of good credit rating is able to obtain loans to a much higher proportion of the value of his commodity if it has been hedged than if it has not been hedged. In England the banks customarily require any commodity which represents the security for a loan to be hedged, while credit is readily procurable on hedged commodities. All unhedged stock is considered a speculation. Thus the hedge limits the risk and removes to a large extent the speculative uncertainties of the commodity price. The hedge is advocated by the bank for its own protection. Its employment is an aid to the borrower by increasing his borrowing capacity and reducing the amount of his own capital which is tied up in each lot which he purchases.

"One further phase of the influence of the hedge upon financing requires mention. The fact that speculative risk may be largely removed enables manufacturer and dealer to work upon a much narrower margin of profit than would be possible if they were compelled to carry highly speculative risks. As it is axiomatic that profit sought is commensurate with the risk assumed, so it is true that the lower the cost may be reduced, the narrower will be the necessary profit margin of miller or spinner.

"The primary purpose of the hedge has been shown to be insurance against the risk of wide price fluctuations. The insurance is obtained by offsetting a purchase or sale in one market—the cash market—by a sale or purchase in the futures market. The protection may approximate complete insurance if prices of spots and futures maintain an exact relationship from the time the hedge is placed until it is closed; or it may be imperfect if there is a dislocation in the relationship. Whether perfect or imperfect, the speculative risk is minimized. A further value of the hedge to the merchant or manufacturer lies in the increased borrowing power which is given him against his holdings of the raw material and the consequent lower margin of profit upon which he can work. Viewed from the standpoint of the bank, security of the loan on a hedged commodity is increased, for the hedger has made the transaction 'independent of speculative risk.'"

While the foregoing refers to transactions in grain, cotton, and other commodities in which organized exchanges are already functioning, the influence of the proposed petroleum exchange may readily be visualized from the examples cited.

WEST TEXAS FIELDS

(Continued from Page 73)

upper pay formations. This test is located in the SE cor., Section 47, Block 30, Township 1n, T.&P. Survey, and at first promised to open up some kind of a pool in this part of Howard County, but at present, hopes have rather been dashed, although shooting may bring a commercial producer from one of the pay strata encountered.

Deep Test for Glasscock

The California Co. has created considerable interest in its proposed deep test in Glasscock County. A combination rig has been erected 2,310 feet from the north and east lines of Section 46, Block 33, Township 2s, T.&P. Survey. This is approximately 3½ miles southeast of the World Oil Co.'s No. 1-C McDowell, in Section 21, Block 34, Township 2s, T.&P. Survey. The World well is the discovery well of the first individual pool to be opened in Glasscock County. It was brought in in May of this year. The California well will test all pay horizons which are found in the Howard County pools, and is expected to pick up the pay horizon of the Texon's No. 1-B University, Reagan County, deepest producing well in the world, consequently a multitude of men in the industry will be anxiously watching this test all the way down.

Two oil peaks were set by Texon's No. 1-B University, Reagan County, last week. On June 16 it flowed 2,640 bbls. of oil and gauged 24,058,000 feet of gas, on June 19 it flowed 2,641 bbls. and made 24,029,000 feet of gas, and averaged better than 2,622 bbls. of oil daily, a gain of over 19 bbls. per day.

This morning another interesting legal battle was opened by the State of Texas, against the California Co. and others, in which the State will seek to recover title of minerals under a strip of land about 1,200 feet wide on the east side of Section 35, Block 194, G.C.&S.F. Survey, containing approximately 106 acres. On this strip the California Co. has four wells, its Nos. 1, 7, 11 and 12 Smith, which have already produced about $500,000 worth of oil, and with eight other wells on the lease are producing about 62,000 bbls. monthly under proration agreement. The strip is in the heart of the Yates Pool, and one of the most valuable pieces of land in it, and in the petition of the State the average annual rental of the land is set at $500,000. Royalty owners holding royalty under this lease are the others named as defendants.

What might be of interest to many interested in the Hendrics Pool, Winkler County, is the abandoning of its No. 4-A Hendricks, Nos. 2-B, 4-B, and 3-E Hendricks, by the Shell Petroleum Corp. These wells became practically nonproductive and the company was given permission to abandon them.

Liner Drilling Co.'s No. 1 Campbell, 330 feet from northeast lines, Section 2, Block B-5, Winkler County, is shut down at 400 feet.

Production slumped 809 bbls. in West Texas during the week. During the past week production and distribution both fell off.

This week wells in the Yates Pool, Pecos County, were given one-hour proration tests to determine potential production of the field. This is the first hourly gauge test given in this field since the first of the year.

Estimated Daily Average Production
WEST TEXAS
Week Ending June 22

County—	Wells	Bbls.
Crane County	308	34,461
Crockett County	43	2,566
Ector County	3	3
Fisher County	7	870
Glasscock County	25	597
Howard County	309	42,800
Jones County	83	3,412
Loving County	12	616
Mitchell County	141	2,627
Pecos Coun.y	313	105,282
Reagan County	243	18,090
Runnels County	3	26
Scurry County	5	28
Upton County	238	12,745
Ward County	6	1,367
Winkler County	603	143,897
Total this week	2,342	369,297
Total last week	2,331	370,106
Difference	11	809

WEST TEXAS COMPLETIONS
Week ending June 22
Crane County

Gulf Production Co.'s No. 63 McElroy, located 2,762 feet from north and 2,310 feet from west of Section 200, Block F, topped the salt at 1,062 feet, topped the

lime at 2,647 feet, topped the pay at 2,780 feet, was drilled to a total depth of 2,887 feet, shot with 200 quarts at 2,780-2,883 feet and had an initial production of 227 bbls.

Howard County

Frank Green's No. 1 Slaughter, located in C SW, Section 32, Block 31, Township 3n, topped the salt at 1,222 feet, topped the lime at 3,040 feet and was dry and abandoned at 3,514 feet.

Mitchell County

Harry Adam's No. 2 Ellwood, located 1,170 feet from south and 2,490 feet from west of Section 15, Block 18, was drilled to a total depth of 572 feet, made 1,500,000 feet of gas at 547-51 feet and was dry and abandoned.

Irion County

Fuhrman Oil Co.'s No. 1 Suggs Lease No. 1, located in the C SE, Section 3,024, Block 24, was dry and abandoned at 2,004 feet.

Pecos County

The location was abandoned on Cromwell & Kimberlin's No. 1 Jackson, located 2,490 feet from northwest and 1,170 feet from northeast of Section 28, Block 3. Mid-Kansas Oil & Gas Co.'s No. 7 Yates-D, located 821 feet from north and 2,824 feet from west of Section 62, Block 1, I.&G.N.R.R. Survey, had an initial production of 630 bbls. at 1,040-1,287 feet.

Tom Green County

Williams and others' No. 1 Willeke, located 75 feet from west and 990 varas from south of Section 3, Blind Asylum Land, was dry and abandoned at 800 feet.

Ward County

Atlantic and Delmar Oil Co.'s No. 2 Hayzlett, located 2,490 feet northeast and southeast of Section 17, Block 5, H.&G.N. R.R. Survey, topped the lime at 2,387 feet, was drilled to a total depth of 2,500 feet, was shot with 90 quarts at 2,470-2,500 feet and had an initial production of 220 bbls.

Winkler County

Skelly Oil Co.'s No. 5 Daugherty, located 2,310 feet south and 1,320 feet west of Section 22, Block 26, P.S.L. location was abandoned. Southern Crude Oil Purchasing Co.'s No. 7 Hendricks T-88-N, located 1,320 feet south and 2,640 feet east of Section 28, Block 26, P.S. land, topped the lime at 2,507 feet, topped the salt at 2,641 feet, topped the pay at 2,955 feet, was drilled to a total depth of 2,958 feet and had an initial production of 500 bbls. daily, 12 per cent water.

PIPE LINE RUNS

Runs Through Trunk Lines

Atlantic P. L. Co., Port Arthur, Tex.	38,500
Gulf P. L. Co. to coast via Ranger, Tex.	27,851
Humble P. L. Co., via Comyn, Tex.	49,063
Humble P. L. Co., via Ingleside, Tex.	48,791
Illinois P. L. Co., via Del Rio, Tex.	44,000
Magnolia P. L. Co., to De Leon, Tex.	28,676
Pasotex P. L. Co., El Paso, Tex.	10,990
Shell P. L. Co., Healdton, Okla.	40,534
Shell P. L. Co., Houston, Tex.	2,337
Total	290,742

Tank Car Shipments

Thomas & Brann, Grant City	0
Orient, McCamey, Tex.	140
The Texas Company, Crossett, Tex.	304
T. P. Coal & Oil Co., McCamey, Tex.	1,159
American Pet. Co., Pyote, Tex.	7,561
Skelly Oil Co., Pecos, Tex.	0
Southern Crude O. P. Co., Wickett, Tex.	17,313
Total	26,477

Runs to West Texas Refineries

Amarillo Prod. Co., Pyote, Tex.	1,040
Bluebonnett Ref. Co., Wickett, Tex.	3,324
Burford Ref. Co., Pecos, Tex.	5,236
Col-Tex Ref. Co., Colorado, Tex.	7,000
Cosden Ref. Co., Big Spring, Tex.	19,068
Great Western Ref. Co., Big Spring, Tex.	5,207
Humble O. & R. Co., McCamey, Tex.	4,668
Midland Ref. Co., Midland, Tex.	1,007
Tonkawa Ref. Co., Pyote, Tex.	2,377
Valley Ref. Co., Pyote, Tex.	3,639
Big Spring Ref. Co.	2,818
Total	55,384

Summary

	Previous week	Last period
Pipe line runs through trunk lines	292,877	290,742
Tank car shipments	22,296	26,477
Runs to West Texas refineries	60,629	55,384
Total daily distribution	375,802	372,603
Total daily production	366,222	364,189
Daily average from storage	9,580	8,414

DAILY AVERAGE PRODUCTION BY LEASES WINKLER COUNTY

Company, farm, sec., blk.—	Wells	Prod.
Amerada Pet. Corp.:		
Cowden, 3, B-12	3	795
Company, lease— S. T. R. wells		recovery
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	8	1,320
Hendricks-B, 44, 26	5	744
Hendricks-D, 29, B-5	8	2,182
Hendricks-E, 41, B-5	6	2,154
Hendricks-G, 46, 26	7	698
Hendricks-H, 30, B-5	1	1
Atlantic and Collett:		
Hendricks-F, 40, 26	13	2,183
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	45
V. T. Bolin:		
Brown Altman, 4, B-5	1	5
California Co.:		
Hendricks, 29, B-5	7	997
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	396
Hendricks-B, 35, B-5	1	36
Hendricks-C, 33, 26	2	202
Hendricks-E, 33, 26	2	787
Cranfill and Texon:		
Hutchings, 47, 26	1	80
Culberson Bros.:		
Hendricks, 40, B-5	1	72
Eas land Oil Co.:		
Hendricks, 35, B-5	2	395
Hendricks-B, 41, 26	1	196
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	13	4,015
Hendricks-B, 45, 26	11	6,596
Hendricks-C, 40, B-5	6	1,199
Hendricks, 44, 26	2	559
Cowden, 3, B-12	3	1,684
Humble Oil & Ref. Co.:		
Hendricks-A, 34, B-5	17	5,135
Hendricks-B, 29, B-5	6	1,097
Hendricks-C, 32, 26	8	729
Hendricks-B, 47, 26	7	707
Hendricks-C, 10, B-12	10	5,402
Independent Oil & Gas:		
Hendricks-A, 34, B-5	7	1,128
Howe-B, 44, 26	3	329
McCabe, 36, B-5	2	216
Hendricks, 42, B-5	1	11
Vardeman-B, 41, B-5	7	762
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	583
Marland Oil Co.:		
Hendricks, 33, 26	4	892
Hendricks, 29, 26	2	148
Hendricks, 34, 26	2	213
May Prod. Co.:		
Hendricks, 34, 26	1	8
American Maracaibo:		
Hendricks-A, 28, B-5	1	45
Hendricks-B, 28, B-5	1	150
Mining & Engineering:		
Hendricks, B-5	1	14
Murchinson & Cranfill:		
Hendricks-A, 35, B-5	3	649
Hendricks-B, 35, B-5	3	682
Hendricks-C, 35, B-5	1	30
Hendricks-H, 35, B-5	1	1,668
Hendricks-I, 34, 26	2	597
Prairie Oil & Gas Co.:		
Hendricks, 40, 26	6	1,566
Cowden, 3, B-12	6	3,803
Pure Oil Co. (Lion):		
Hendricks, 41, B-5	11	1,805
Hendricks-B, 34, B-5	13	3,944
Hendricks-C, 45, 26	14	8,589
Hendricks-D, 44, 26	1	179
Republic Prod. Co.:		
Hendricks-A, 45, 26	13	3,215
Hendricks-B, 41, B-5	5	189
Shell Pet. Corp.:		
Hendricks-A, 45, 26	6	1,297
Hendricks-B, 29, B-5	6	1,033
Hendricks-C, 29, B-5	8	926
Hendricks-D, 41, B-5	6	398
Hendricks-E, 40, B-5	3	714
Hendricks-F, 46, 26	8	1,797
Hendricks-G, 39, 26	1	33
Shell-The Texas Company:		
Cowden-A, 3, B-12	6	1,495
Hendricks, 45, 26	6	1,554
Hendricks-A, 29, B-5	11	1,776
Hendricks-B, 40, 26	6	730
Hendricks-C, 40, 26	6	1,786
Hendricks-D, 40, 26	6	474
Hendricks-E, 39, 26	4	370
Skelly Oil Co.:		
Hendricks, 40, 26	12	6,027
Hendricks-B, 39, 26	2	19
Hendricks-C, 39, 26	1	302
Southern Crude Oil Purch. Co.:		
T-67 Hendricks-A, 42, B-5	3	125
T-67 Hendricks-3-A, 4, B-12	5	606
T-67 Hendricks-B, 44, 26	5	610
T-67 Hendricks-3-B, 33, 26	4	426
T-67 Hendricks-C, 33, B-5	5	620
T-67 Hendricks-2-D, 28, 26	4	906
T-67 Hendricks-E, 42, B-5	4	131
T-67 Hendricks-F, 33, B-5	5	664
T-68 Hendricks-3-A, 35, B-5	3	155
T-68 Hendricks-B, 46, 26	2	248
T-88 Hendricks-A, 44, 26	6	835
T-88 Hendricks-B, 4, B-12	4	931
T-88 Hendricks-C, 28, B-5	8	1,165
T-88 Hendricks-D, 4, B-12	6	3,100
T-88 Hendricks-H, 28, B-5	7	1,155
T-88 Hendricks-I, 30, B-5	7	1,273
T-88 Hendricks-J, 30, B-5	5	1,002
T-88 Hendricks-K, 41, 26	7	2,011
T-88 Hendricks-L, 4, B-12	4	909
T-88 Hendricks-M, 33, 26	31	13,538
T-88 Hendricks-N, 28, 26	5	1,786
T-88 Hendricks-O, 28, 26	4	1,403
T-88 Hendricks-P, 28, 26	1	248
T-88 Hendricks-Q, 27, 26	2	875
T-88 Hendricks-R, 28, 26	3	789
T-88 Hendricks-S, 34, 26	4	1,262
T-88 Hendricks-T, 34, 26	7	525
T-88 Hendricks-U, 41, 26	9	1,453
T-88 Hendricks-V, 29, 26	1	62
T-88 Hendricks-W, 5, B-12	1	265
T-88 Hendricks-CX, 21, 26	1	217
T-89 Hendricks-A, 35, B-5	3	390
T-89 Hendricks-B, 35, B-5	2	476
T-89 Hendricks-C, 35, B-5	3	1,287
T-89 Hendricks-D, 35, B-5	1	253
T-89 Hendricks-E, 40, B-5	3	179
T-89 Hendricks-F, 40, B-5	2	263
T-89 Hendricks-H, 46, 26	2	283
T-89 Hendricks-I, 10, B-12	2	124
T-89 Hendricks-J, 9, B-12	8	2,252
T-90 Hutchings, 47, 26	3	248
Texon Oil & Land Co.:		
Hendricks-A, 41, B-5	6	567
Hendricks-B, 45, 26	6	1,434
Company, lease— S. T. R. wells		recovery
Winkler O. P. Co.:		
Hendricks, 33, 26	1	57
Total Hendricks Pool	577	139,546

LECK AREA

Atlantic, Kesslar & Logan:		
Leck, 3, 74	2	583
Amerada Pet. Corp.:		
Leck, 3, 74	2	625
Empire G. & F. Co.:		
Daugherty, 3, 74	3	215
Magnolia Pet. Corp.:		
Scarborough 1, C-22	1	145
Gulf Prod. Co.:		
Scarborough, 1, C-22	1	74
Daugherty, 3, 74	1	72
Shell-Llano Oil Co.:		
Daugherty, 1, C-22	3	163
Shell-Danciger:		
Leck, 3, 74	2	189
Shell Pet. Corp.:		
Leck, 3, 74	1	off
Skelly Oil Co.:		
Leck, 3, 74	1	329
Prairie Oil & Gas Co.:		
Leck, 16, 74	1	308
Daugherty, 3, 74	1	232
Scarborough, 1, C-22	1	43
Warner-Quinlan:		
Leck, 3, 74	1	298
Total Leck Pool	21	3,327

O'BRIEN POOL

Marland Oil Co.:		
Morton, 10, B-12	2	196
Wentz Oil Corp.:		
Morton, 10, B-12	1	133
Simms Oil Co.:		
Sealy, 50, F	1	27
Richardson et al:		
Stockton, 50, F	1	276
Total O'Brien Pool	5	832
Grand total Winkler County	603	143,705

PECOS COUNTY YATES POOL

Company, tease—	Wells	Prod.
M. H. Black:		
Fee	1	11
California Co.:		
Yates—Lease 1	18	7,759
Smith—Lease 1, Sec. 27	3	497
Smith—Lease 1, Sec. 23	7	1,709
Smith—Lease 1, Sec. 21	3	861
Smith—Lease 2	2	101
Smith—Lease 3	12	2,585
Smith	1	4
Tippett—Lease 1	1	35
Cosby Drilling Co.:		
Smith	1	253
Gulf Prod. Co.:		
All leases	36	13,295
Humble O. & R. Co.:		
Smith-A	10	1,541
Smith-B	5	857
Kirby Pet. Co.:		
Tippett	2	50
Kirby Pet. and Edson:		
Tippett	1	223
Marland Oil Co.:		
Yates-A	6	670
Yates-A salvage		4,457
Mazda & Savoy:		
Smith	3	649
McCarty Oil Co.:		
Gray	1	off
McMan Oil & Gas Co.:		
Smith-A	1	1,312
Smith-B	4	1,143
Smith-C	5	883
Tippett	2	305
Richardson	1	93
McMan and Marland:		
Yates	17	4,766
Mid-Kansas and Transcon.:		
Ya es-A	27	13,942
Yates-B	27	6,290
Yates-C	12	6,772
Yates-D	7	7,747
Yates-E	1	94
Yates-F	4	701
Yates-G	4	1,142
Yates-H	8	5,720
Smith	5	1,601
Smith	18	3,576
Grayburg Oil Co.:		
Pecos River Bed	6	469
Salvage		813
Pecos Valley Oil Co.:		
Fee, Sec. 22, Blk. 26	2	62
Phillips Pet. Co.:		
Monroe	1	65
Ramsey	1	223
Smith	2	661
Red Bank Oil Co.:		
Smith	5	506
Shell Pet. Co.:		
Tippett	11	2,351
Smith	9	979
Smith-B	1	689
Smith-D	3	525
Smith-E	1	22
Simms Oil Co.:		
Smith	7	5,773
Skelly Oil Co.:		
Tippett	1	95
Total Yates Pool	306	104,870

CONTINENTAL OIL'S NEW OFFICIAL BOARD

PONCA CITY, Okla., June 24.—The officers and directors of the merged Marland Oil Co. and Continental Oil Co., now known as the Continental Oil Co., are as follows:

Executive committee—George Whitney, W. C. Potter, S. H. Keoughan (chairman), E. T. Wilson, D. J. Moran, Arthur B. Lawrence and Fred Searles, Jr.

Officers—E. T. Wilson, chairman of the board; S. H. Keoughan, chairman of executive committee; D. J. Moran, president; W. H. Ferguson, executive vice president; James J. Cosgrove, general counsel; W. W. Bruce, executive vice president and secretary; Walter Miller, vice president, in charge of manufacturing; E. J. Nicklos, vice president, in charge of production; E. S. Karstedt, vice president, in charge of sales; B. H. Markham, comptroller and assistant to president; G. F. Smith, treasurer; H. J. Kennedy, R. E. Onstot and B. E. Ireson, assistant secretaries and assistant treasurers.

Directors—George Whitney and Thomas S. Lamont of J. P. Morgan Co. and W. C. Potter, president of Guaranty Trust Co.; Arthur B. Lawrence of F. S. Smithers & Co.; D. J. Moran, president; Fred Searles, Jr., and Charles F. Ayer of Newmont Mining Co.; William V. Griffin of the Brady estate; E. T. Wilson, S. H. Keoughan and W. H. Ferguson, all officers of old Continental company; E. N. Potter, Alfred Bunker and Vernon Taylor, directors of old Marland company; W. W. Bruce, vice president of old Marland; and C. H. Pforzheimer.

BOGGY CREEK EXTENDED NORTH BY SMALL WELL

By Neil Williams

CORSICANA, Tex., June 24.—A slight northward extension of production at Boggy Creek was effected during the week by a small well, No. 2-B Elliott & Clark, completed by the Humble Oil & Refining Co. in a sand at 3,647 feet. This well is just northwest of the discovery well of the field. The main field is to the south of the Elliott & Clark tracts. This completion was offset by a failure in Humble's No. 2-A Todd, which was dry at 3,900 feet. The latter is on the southeast flank of the dome.

Another Boggy Creek test, No. 1 Peter Holloway, a former producer which has been working over, was swabbing as the week closed but had not been completed. Humble's No. 3 Holloway is drilling chalk at 2,421 feet. Its No. 1 J. C. Beard on the extreme south side of the dome is drilling hard shale and lime at 2,561 feet. A rig has been set up for No. 3-A Elliott & Clark and also one for No. 3-A Todd.

Humble Oil & Refining Co.'s No. 3-A Southern Pine on the Posey Saline, 8 miles south of Boggy Creek in Anderson County, is drilling chalk at 3,413 feet. Pure Oil Co.'s No. 1 Jackson, Bethel Dome, Anderson County, is drilling hard shale at 3,787 feet. Another wildcat, Keen and associates' No. 1 Broonfield, was started up in Anderson County, but after going to 43 feet shut down.

In Robertson County, W. D. Alexander and associates' No. 1 Anderson, Webb Survey, northeast of Colbert, is drilling shale at 2,380 feet. Magnolia Petroleum Co.'s No. 1 Duran, Lollar Survey, north of Pine Hill, Rusk County, is drilling chalk at 2,432 feet.

Henderson Petroleum Co.'s No. 1 Cade, Dorsey Survey, Henderson County, was coring at 1,741 feet June 19.

Daily average production of East Central Texas fields for the week ending June 22 was:

EAST CENTRAL TEXAS

Boggy Creek	2,737
Cedar Creek	110
Currie	416
Mexia	5,436
Minerva	650
Nigger Creek	330
Powell	7,919
Richland	370
Thrall	32
Wortham	1,220
Total	19,220
Total previous week	19,365
Decrease	145

C. W. MARKLEY DIES

C. W. Markley, veteran oil man, died Wednesday, June 19, in a Tulsa hospital. He suffered a stroke of paralysis three years ago which caused his retirement. Mr. Markley had operated in Indiana, Illinois, Texas, Oklahoma and Kansas oil fields. He came to Tulsa in 1913. Funeral and burial were held in Tulsa on Saturday, June 22.

SUPREME COURT TO REVIEW PATENT CASE

(Continued from Page 142)

four" to appeal to the highest tribunal in the country, rather than seek a rehearing of the case, is considered here to be an advantageous move to assure final adjudication as quickly as possible.

Those present at the conference in The Texas Company's offices included: For The Texas Company, C. B. Ames, vice president; H. T. Kline, general counsel; R. J. Dearborn, head of the patent department; D. W. Cooper, patent attorney. For the Standard Oil Co. of Indiana, L. L. Stevens, general counsel; Russel Wiles, patent counsel; Robert E. Wilson, chief of the corporation's research department, and B. K. Brown of the same department. For the Standard Oil Co. of New Jersey, John W. Davis, counsel; Chester D. Swain, head of the company's legal department. For the Gasoline Products Corp., counsel from the corporation's legal representatives in patent matters, Hoquet & Neary, 43 Exchange Place.

It is declared that regardless of the outcome of the case, the income of the involved companies would not be greatly affected either way. Reports that a forced abandonment of the patent pooling through possible loss of the case in the Supreme Court would materially reduce the revenues of the patent-owning company are discounted in official circles. It is believed that in such an event a new system would be evolved, for example that of the substitution of individual licenses with royalty receipts just about the same, but with the licensee organizations paying four small fees rather than one general amount.

NO IMPROVEMENT IN GASOLINE MARKET

(Continued from Page 38)

pected gasoline export prices to be advanced the latter part of last week.

The prices of 10 cents for 64-66 375 endpoint gasoline and 9¾ cents for 64-66 390 endpoint at the Gulf Coast which have been in effect for several months have not been changed. These Coastal prices are about what the Oklahoma, Kansas and North Texas refiners would like to obtain at their refineries for the two grades mentioned. With a 2-cent freight and handling charge for movement from the Mid-Continent refineries to the Coast it is apparent that the Coastal quotations would have to be advanced that amount before the inland refiners could expect to share in the export business.

The Mid-Continent export business under normal conditions, when compared with the domestic movement, is not large, being less than 5 per cent of the total. However, in times when distress material is available as is now the case, export buying serves to strengthen the market. There has been practically no export buying on the spot market since March and the small quantity of contract material based on the Coastal market has moved at prices which have not been satisfactory to the sellers.

Gasoline and Naphtha

The small number of spot gasoline sales reported by practically all the larger refiners in Oklahoma on Monday again reflects the inactivity of that market. Two-thirds of the U. S. Motor sales on Monday were reported by one company. Three companies did not report any sales. It is conceded that the differential of 1 cent between the high and low prices cannot be maintained indefinitely. Either the demand at the top price must improve or the larger refiners will find it necessary to reduce the present 9¼-cent price to their customers.

Since June 1 the movement of 56-58 450 endpoint material to domestic buyers has improved. A few jobbers take this grade on their contracts during the summer months instead of the straight U. S. Motor grade. This 450 business, however, is decreasing in importance from year to year. This is due to the fact that there is very little difference in price and also because of the competition among distributors selling quality products throughout the year. The trade generally recognizes a quarter-cent differential between 450 and 437 endpoint grades.

The high gravity market is badly muddled. Instances are cited in which refiners selling U. S. Motor at 9¼ cents have taken orders for 400 and 375 endpoint material at the same price.

In North Texas sales of 400 endpoint material for domestic movement at 8½ cents are reported. The 390 endpoint gasoline in that territory sold as low as 8⅝ cents with 8¾ cents the low on 375 endpoint gasoline. With these competitive prices prevailing the price differentials in the Oklahoma high gravity market are as wide as in the case of the U. S. Motor grade.

Prices on 450 endpoint naphtha vary from 8¼ to 8¾ cents. The blender demand has not been active since the first of the month.

Kerosene and Distillate

The 41-43 water white kerosene grade is fairly firm at 5¾ to 6 cents. The fact that farmers in the Middle West have been held back in their spring work has lengthened the tractor demand and a few refiners report an exceptionally large jobber demand. The higher gravity grades also are steady.

The distillate demand is small but prices are firm. Sellers are looking forward to a large increase in demand when the season for furnace oils starts in the fall. Contracts already closed between refiners and jobbers point to this development.

Fuel Oil and Gas Oil

There is nothing new in the fuel oil and gas oil market. Very little high gravity material of low sulphur content is offered for interstate shipment. The low gravity material when sold in competition with West Texas fuel oils brings prices as low as 45 cents a barrel. Straightrun gas oil suitable for cracking can find buyers at 2¾ cents in the State. The U. G. I. material for Chicago and Detroit delivery is selling as low as 2⅜ cents.

Natural Gasoline

The natural gasoline market continues unsettled. One large manufacturer continues to buy for export movement paying 7⅜ and 7½ cents for Grade AA material. Some distress sales at the Coast were reported when shipments from several Mid-Continent plants failed to meet the doctor test for export movement.

This situation as to specifications has tended to bring confusion as to prices for domestic movement and quotations on the A and AA grades vary from 7 to 7½ cents with 7¼ to 7½ cents the accepted market. The B, BB and C grades are weak at 7½ to 7⅝ cents.

Lubricants and Wax

The strong market situation in regard to steam refined stock and bright stocks and the expected advance in neutral oils has been explained. With the arrival of summer the season of maximum consumption for Mid-Continent lubricating oils has arrived. The preseason demand of the past few weeks has emphasized the trend toward high viscosity oils. This demand will be especially heavy during the summer tourist season.

More inquiries for wax were reported with no changes in prices.

EASTERN DISTRICT OFFICERS

E. L. Estabrook of the Pan American Petroleum & Transport Co., New York, has been appointed chairman for 1929 of the eastern district, American Petroleum Institute, Division of Development & Production Engineering. Other officers are: Vice chairman for Pennsylvania and West Virginia, J. French Robinson, Peoples Natural Gas Co., Pittsburgh, Pa.; vice chairman for Kentucky, Gordon N. Campbell, Swiss Oil Corp., Lexington, Ky.; vice chairman for Ohio, Illinois and Michigan, John C. Askam, Ohio Oil Co., Findlay, Ohio; secretary, H. H. Hill, Standard Oil Development Co., New York.

A.P.I. Engineers To Meet in Los Angeles June 26-28 Inclusive

Pumping methods and casing practice occupy the most prominent place in the program for the June meeting of the Division of Development and Production Engineering to be held June 26 to 28 inclusive in Los Angeles, Calif., under the auspices of the California section.

The first day, June 26, will be devoted to a meeting of the national executive committee of the division. John D. Suman, of the Humble Oil & Refining Co., Houston, Tex., national chairman, will preside. This meeting will take up matters relating to work of the various district organizations of the division throughout the country. It is understood the practice of the Kansas-Oklahoma district in holding field meetings where field men have an opportunity to attend and take part will be discussed with a view of inaugurating such meetings throughout the country.

The program for June 27 and June 28 follows:

June 27

9 a.m.—Registration in Music Room, Biltmore Hotel. Address of Welcome by Chairman A. C. Rubel, Union Oil Co.

10 a.m.—Technical Session. Morning session under auspices of California Drilling Committee, Wendell M. Jones.

Papers

1.—"California Casing Practice," J. V. Kimber, Pacific Western Oil Co.

2.—"Latest Developments in Casing and Casing Joints," C. J. Coberly-Kobe.

Discussion.

No formal luncheon.

Afternoon Session—Under auspices of California Committee on Production, Francis Lake, presiding.

Program

1.—"Subsurface Pumping Equipment," E. E. Stevenson, engineer, D. & B. Pump Co.

2.—"Surface Equipment for Pumping Wells," J. H. Wallace, production engineer, Union Oil Co.

3.—"Economic Operation of Small Wells," A. C. Dyer, engineer, United States Geological Survey, Taft, Calif.

4.—"Effective Pumping of Large Capacity Wells," H. T. Wyatt, production engineer, Shell Oil Corp.

Discussion.

June 28

Field Trips—9 a.m. to 12 noon.—Arrangements have been made through the courtesy of several oil companies and supply companies for an inspection trip of several of the oil fields in the Los Angeles Basin and vicinity by airplanes or automobiles. These trips have been arranged primarily for the visiting members of the American Petroleum Institute.

Afternoon Session

12:30 p.m.—To the nineteenth hole through the courtesy of the Wilshire Country Club—a golf tournament open to all American Petroleum Institute members and their guests has been arranged. Entrants may secure luncheon at the club A charge of $1 will be made. Actual play will start at 2 p.m. An entrant's fee of $3 will be charged to cover green fees and incidental expenses.

NEW PROCESS TO YIELD 100 PER CENT GASOLINE

(Continued from Page 44)

in excess of the economic market demand for heavy fuel oil. It was, therefore, natural that knowledge and technique developed in the liquefaction of coal should be employed in the solution of the problem of converting surplus heavy fuel oil to lighter fuels.

This research and development work has resulted in adapting hydrogenation process to the treatment of fuel crudes or refinery residues so that it is now possible to convert asphaltic or high sulphur crudes or residues to nonasphaltic low sulphur light distillates. By minor changes in the process the product may be either straw colored low sulphur gas oil or water white gasoline requiring little, if any, finishing treatment. The volume yield of gas oil or gasoline is practically 100 per cent. That is, by hydrogenation 100 bbls. of gas oil or gasoline can be produced from 100 bbls. of fuel oil or refinery residues. The hydrogenation process prevents the formation of coke inherent to all cracking processes, reduces gas formation and is virtually continuous. By the use of this process to meet consumer demand for lighter fuels it should be unnecessary to produce heavy fuel oil in excess of economic commercial requirements.

In 1927 intensive laboratory work on hydrogenation applicable to the problems of the petroleum industry was begun at Baton Rouge in the research laboratory of the Standard Oil Co. of Louisiana. The work was followed by the erection of a small plant at the Baton Rouge refinery last year to demonstrate the process on a commercial scale and to determine certain engineering factors incapable of solution in a laboratory. Late last year larger commercial units were authorized and construction is now well under way.

The uses which may be made of this process by the refining industry of the future and the products which may be made thereby are manifold. As catalytic hydrogenation of petroleum products is controllable and flexible it may be employed to produce widely differing products depending on the character of the raw material available and finished products required. It is confidently believed this process marks a forward step in the art of petroleum refining. The industry has available to it a process for constructive upbuilding of its products without corresponding degradation of a portion thereof. A 5,000-bbl. per day large scale plant will be in operation at the Bayway refinery of the Standard Oil Co. of New Jersey by the end of this year. After this plant has been operated for a length of time sufficient to demonstrate the correctness of design as to mechanical features and give data necessary for accurate determination of cost of operation the use of the process will be made generally available to the petroleum industry of the United States.

L. P. ST. CLAIR CHOSEN TO SUCCEED E. W. CLARK

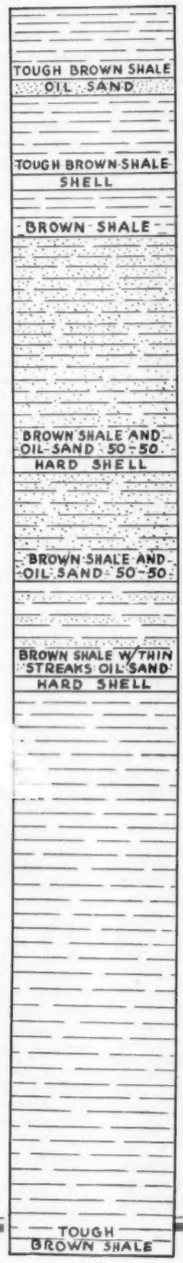
LOS ANGELES Calif., June 25.—The directors of the Union Oil Co. of California have just elected L. P. St. Clair

L. P. St. Clair

executive vice president succeeding E. W. Clark who has resigned to devote more time to personal interests.

R. E. Matthews, heretofore in charge of manufacturing, has been placed in charge of sales, succeeding Paul N. Boggs who has been placed in charge of field operations.

100% Recovery



Log of core taken at Santa Fe Springs (California) by the W. H. Todd Drilling Co., contractors. This core was taken below 4,100 feet for one of the major oil companies drilling for deep sand production.

through 11 formations in 20 feet of

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Try cutting through tough shale with a four way reamer and learn why a driller can "outcuss" the whole wide world. Then use an Elliott Core Drill with pilots under gauge of reamers. As the table chain buckles down to smooth pulling and the pumps steadily clean away the tough shale cuttings, you will know the thrill of coring with the smoothest running core bit on the market.

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15 So. Madison St., Tulsa, Okla.
104 Brien St., Beaumont, Texas
417 So. Washington Street, El Dorado, Arkansas

Export Office:
150 Broadway, New York

Of Interest to Sales Departments

National Conference Standardizes Grease Measuring Devices

A code of specifications and tolerances for grease-measuring devices has been adopted by the twenty-second National Conference on Weights and Measures and the following will be placed in effect not earlier than July 1, 1930.

Definition

A mechanically operated grease measuring and dispensing device, hereinafter referred to as a grease-measuring device, is a mechanism or machine adapted to measure and deliver grease or transmission oil by definite volume This definition is not to be construed to include devices which are obviously designed and intended solely for high-pressure lubrication of bearings and similar parts or devices employed solely in operations where a flat rate is charged for the operation and no variation in the charge is made on account of the supposed amount of grease or transmission oil delivered. When a device is so used there shall be no indicating device or statement purporting to indicate that any definite weighed or mensured quantity can be delivered by the device.

Specifications

Permanence.—All grease-measuring devices shall be of such design, construction and materials that they may reasonably be expected to withstand ordinary usage without impairment of the accuracy of their measurement, or the correct functioning of their operating or indicating parts.

Units of Delivery.—Grease-measuring devices shall have the following discharge capacities per stroke or per cycle of the primary indicating elements, and these only: One pint; a multiple of the pint; or a binary submultiple of the pint, that is, the quantity obtained by dividing the pint by the number 2 or a power of the number 2.

Indication of Delivery.—All grease-measuring devices shall be so designed and constructed that the initial zero condition and the amount delivered in terms of liquid measure* shall be clearly and definitely indicated by automatic means, and the indication of any delivery shall take place only when the full discharge has in fact occurred. Provided, however, that a device in use at the time these specifications take effect shall not be required to comply with the above requirement for automatic indication of the amount delivered when the device delivers, within the tolerances hereinafter provided, a unit quantity of a pint, a multiple of a pint, or a binary submultiple of the pint per stroke or per cycle of its operating elements, and when, in addition, the device is conspicuously and permanently marked to indicate the value of this unit quantity.

Sensitiveness.—All grease-measuring devices shall be so designed and con-

(Continued on Page 182)

*Note.—Devices which at the time of adoption of these regulations in any jurisdiction are marked to deliver in pounds rather than in pints and which in other respects conform to the retroactive sections of this code or are susceptible of being made so to conform, should not be condemned and confiscated on this ground alone, but the word "pound" should be obliterated wherever it occurs and the word "pint" substituted therefor. In this case the device should be readjusted if necessary.

BUYS OIL COMPANIES

CHICAGO, June 24.—The Standard Oil Co. of Ohio is reported here to have exercised an option on the business of the Caldwell & Taylor Oil Co. of Cincinnati, Ohio, and the Areo Gasoline Co. of that city.

FURTHER OVERLAPPING IN EAST COAST MARKETING TERRITORIES

NEW YORK, June 24.—With the start of the summer motoring season, the oil industry is watching with close interest developments in the competitive situation in East Coast area. Competition will be keener than ever. Some predictions have been heard that price cutting wil be resorted to in an effort to hold gallonage, and secure new outlets, and that the Atlantic seaboard will be the scene of a price war fully as destructive as that waged some time ago on the Pacific Coast. In other quarters the belief has been expressed that the industry is finished with large-scale price wars and that the lessons learned in previous selling campaigns of this sort, plus the spirit shown by leading interests through adoption last year of a code of ethics will prevent any widespread price slashing.

The competitive picture in the East is entirely different from a year ago. Although as early as 1927 and 1928, there were definite indications of overlapping of territories, and disregard for previously existing territorial "spheres of influence" there were no new interests in the field of national importance.

A year ago at this time invasion of Eastern gasoline markets by the Shell was a rumor; today it is an actuality. Talk was heard of a possible entry into Eastern markets of Richfield Oil Co. of California, today Richfield filling stations are scattered throughout many sections of the East Coast. Last year there was talk of Standard Oil Co. of New Jersey coming into Standard of New York's territory, now the New Jersey company is an important factor throughout New York's territory through its ownership of Beacon Oil Co. At this time in 1928 it was known that Pan American was to have a large refinery at Aruba, Dutch West Indies, and that the company, formerly specializing to a great extent in fuel oil, would become a heavy gasoline marketer. Now the new Aruba plant is in operation, and Pan American has a large gasoline production there, and is developing marketing outlets throughout the East Coast. A year ago Marland as a factor in East Coast markets was not considered. This year, Marland, or as it is now, known, Continental, is in process of becoming a national marketing organization. Vacuum Oil Co. last year was regarded solely as a manufacturer and distributor of lub oil and greases, aside from its small gasoline business in one or two sections of up-State New York, where it owns small filling station chains. Now, the company is developing a campaign contemplating general gasoline distribution of gasoline throughout the Atlantic Coast states and the remainder of the country.

Shell's entrance into the East Coast territory has been accomplished swiftly.

The eastern business is being handled through Shell Eastern Petroleum Products, Inc. This Eatern marketing subsidiary has the Royal Dutch-Shell East Indian refineries, and the California Shell refineries to draw on for gasoline and other products, and owns as well the refinery formerly operated by New England Oil Refining Co. Development of the Eastern Shell business, it is understood, contemplates the modernization of the New England refinery. At the time of the acquisition of the New England Oil Refining Co. by Shell Eastern, the New England concern already had fairly wide distribution of gasoline and other products in New England. Immediately following the acquisition, Shell became active in the field throughout the entire Atlantic Coast area. Shell stations are already a familiar sight in New York City and promise to make their appearance down the Atlantic Coast seaboard. Acquisition of bulk stations located at strategic points, and marine terminals in several ports, is part of the Shell expansion plan.

Richfield Oil Co.'s operations thus far have been centralized to a great extent in New York, New Jersey, Pennsylvania, and portions of New England. Richfield secured, as a nucleus for its Eastern marketing subsidiary, the business of Walburn Petroleum Co., local distributing organization in New York and New Jersey, and also the business of Acewood Petroleum Co., an important unit among the independent marketers and exporters of gasoline and other products. In addition, Richfield acquired a number off small independent marketers. In connection Marland already has a good business out of Baltimore, where it owns the Prudential Oil Refining Co.'s plant, and has considerable marketing volume in the area served from Baltimore.

Completion of Pan American's new refinery at Aruba, Duth West Indies, places that company in a position to assume an important place throughout the Atlantic seaboard. The Aruba refinery started running crude in February and is now handling close to 100,000 barrels of crude per day. The topping units and other facilities, and storage for crude and refined products, are practically completed, and the cracking units are expected to be in full operation by August. The company is already producing considerable gasoline, much of which is moving to the United States for distribution. Completion of the Aruba refinery, it was recently stated by President Stewart, will enable the company to handle substantially all if its crude production from Venezuelan fields, will make possible the diversification of finished products necessary to

(Continued on Page 162)

Who's Who
IN PETROLEUM REFINING AND MARKETING

By C. O. Willson

Ninth of a series of articles describing briefly the operations of the major refining and marketing organizations in the United States.

Atlantic Refining Co.

The Atlantic Refining Co. which has attracted wide attention in financial circles in the past two years for years has been one of the largest refining and marketing organizations. Its operations after the Standard dissolution were confined to the latter activities. In recent years the company has gradually secured sufficient crude oil with economical transportation facilities to support its established refineries and market outlets and provide for future expansion. Subsidiary companies during the past two years have been fortunate in securing large crude oil production in West Texas and other areas so that its 1928 production was 150 per cent greater than that of 1923.

This additional crude oil supply has given the company the necessary raw material for the operation of its four refineries in the United States. These refineries and their capacities are as follows:

Refinery—	Daily cap'y gallons
Point Breeze (Philadelphia)	50,000
Franklin, Pa.	9,000
Pittsburgh, Pa.	8,000
Brunswick, Ga.	5,000
Total	72,000

The Point Breeze refinery of the Atlantic company is one of the oldest major plants of the oil industry. Its operations are complete, the plant manufacturing a line of specialties in addition to the usual products. The Franklin and Pittsburgh refineries also are practically complete in their operations. The Brunswick refinery has skimming and cracking equipment.

In connection with its refinery operations in Pennsylvania, the Atlantic company has perfected a plan of pipe line transportation in which crude oil is being moved inland from the coast. Through an arrangement with the National Transit Co., owners of a pipe line system in the East, crude oil is being transported from Philadelphia to its Franklin, Pa., refinery. The company plans to arrange for the same service for its Pittsburgh refinery. In the past these inland refineries have been dependent on Pennsylvania, Ohio and West Virginia pipe line connections for their crude oil supplies. The new arrangement gives the refineries the advantage of a relatively cheap crude oil supply from West Texas and any other crude oils which are available at the East Coast.

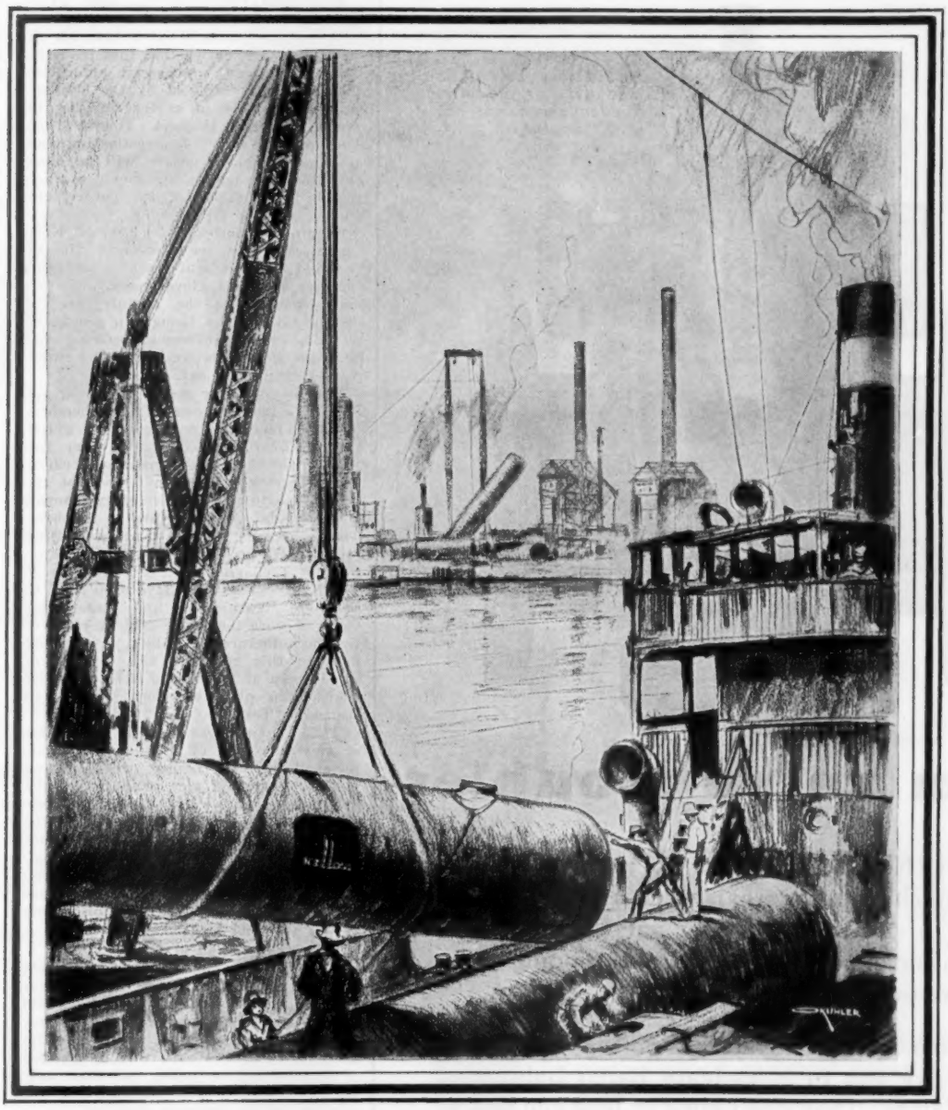
Marketing

Originally the Atlantic's domestic marketing was confined to the states of Pennsylvania and Delaware where the company is still the dominant market organizations. The three refineries of the company in Pennsylvania are located at points so that all parts of the State can be reached with low transportation charges.

In recent years, to take care of additional refinery output the company has gradually expanded its market outlets into adjoining territories. The company is now a large distributor in the New England States of Massachusetts, Rhode Island and Connecticut. Its marketing facilities have been expanded so that they now extend along the coast of Florida. Either directly or through jobbing concerns which it has acquired the Atlantic company in addition to the states mentioned markets in New Jersey, Maryland, Virginia, North Carolina, Georgia and Florida. The Red "C" Oil Co. and Richmond Oil Co. are subsidiary jobbing concerns operating in the coastal states.

In addition to these bulk and retail station outlets, the Atlantic has a substantial tank car business in other states. Part of the gasoline from its Pennsylvania refineries is sold in Ohio and New York.

The Atlantic company is one of the largest export organizations. To take care of this export business the company is a large buyer from other refineries. The company is one of the major export buyers in the Mid-Continent Field. Its products are sold in Europe, Africa and South America. The company and the Union Oil Co. of California own the Union Atlantic Co. on a 50-50 basis. This company carries on an export business in Australia and the Orient.



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COMMITTEE OF CABINET MEMBERS TO CONFER ON HELIUM POLICY

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 24.—Whether the business of extracting helium from natural gas will be a function of the government or whether that industry will be made a commercial enterprise will be greatly affected by the decision of the committee of cabinet officers to whom President Herbert Hoover has delegated the duty of investigating and determining which course will be most advantageous to the government, or what should be functions of the government and of private citizens.

Senator Frederic M. Sackett of Kentucky called to see President Hoover and told the President there was opposition between the Government and private concerns in the manufacture of helium gas and he thought it would be wise to have the differences between officials and representatives of private enterprise straightened out.

President Hoover stated he would appoint a committee composed of members of his cabinet to investigate the entire subject, later designating Secretary Lamont of the Commerce Department, chairman; Secretary James W. Good of the War Department and Secretary Charles Francis Adams of the Navy as members. This committee lost no time in inviting representatives of the Helium Company, Inc., of Louisville, Ky., a subsidiary of the Kentucky Oxygen-Hydrogen Co., to come to Washington and state their views because the entire controversy over the manufacture of helium was really between this company and officials of the Bureau of Mines who have charge of the helium plant at Fort Worth and Amarillo, Texas.

This hearing was held in the office of the Secretary of War and was attended by W. H. Girdler, president, and E. H. Courtenay, vice president of the Helium company, who presented the committee with a brief fully reviewing the matter. E. G. Luening, vice president, and J. H. Luening, chief operating engineer, both technical advisors of the company, were present in the city in case the hearing should call for a discussion of technical questions.

Question of Policy

As stated in the brief, the question brought up by the Helium company was whether the Government's policy would be to compete or co-operate with industry in the manufacture and sale of helium gas. This it was said was a question of administrative policy so that only the President in consultation with his cabinet could render a decision.

The representatives of the helium industry believe the question of price in the sale of helium would take care of itself but did not believe that in the long run private industry could compete with the Government, not because of their inability to give as low a price but because the Government, being in the business of producing helium, there would be introduced many forms of disadvantages because the Government itself would for a long time at least be the chief consumer of helium gas through the operations of the army and navy.

The brief pointed out that the helium company was ready to undertake to supply from 10,000,000 to 12,000,000 feet or any quantity the army and navy required, if it was enabled to plan its future operations intelligently by receiving a definite statement that the Government requirements for helium would be purchased from the industry so long as the industry proved itself capable of furnishing them as well in the future as in the past. The company's brief approved the experimental measures taken by the Government, but it was the opinion of the helium company such work should be carried on in co-operation with private industry, the actual day to day production of helium to be left in the hands of the industry.

It was pointed out that all of the helium bearing gas available to the Government was also available to private concerns if the Government so decreed. In other words, there could be no increase in the supply of helium by Government production.

Private Operation

In 1928 when the House Appropriation Committee was considering the Department of Commerce bill Director Turner of the Bureau of Mines recommended that the production of helium be left to commercial companies and at a meeting in Washington on July 3, 1928, with the three assistant secretaries for aeronautics of the War, Navy and Commerce Departments, representatives of the Helium company were unofficially advised that the Government plant then building would be held in standby condition for emergency purposes and that the Helium company would receive orders from the Government in increasing quantity.

The Secretary of the Navy recently testified that private parties were induced to go into the production of helium by the Department.

It was pointed out that the basic helium act authorizes the Secretary of Commerce to do certain things only "when helium cannot be purchased from private parties at less cost" and in the original discussion of this bill it was specifically stated on the floor of the House of Representatives that "it is the purpose of the Government to stimulate the production of helium commercially by private concerns and then the Government will get helium for its use by purchase from these various concerns."

The committee was reminded that the Helium company had delivered helium to the Navy Department continuously since 1927 in substantial quantities at an average price of about $35 per 1,000 feet.

Price Less

During this period the price of helium furnished by the industry, including every item of cost from geological surveys and drilling to depreciation, had averaged about 20 per cent less than the average Government cost even though Government accounting methods do not include in the cost some of the largest items of expense.

The Government charges certain items against conservation and experimentation. Others such as depreciation, amortization, new construction and improvements are omitted entirely. The industry must include every item of cost plus profit in its price. No private concern could be expected to compete on this basis.

In the Government manufacture of helium the Bureau of Mines has advised that disposition of the residue gas is essential and has recommended consideration of the manufacture of lamp black and fuel oil. Such a step the company declared would put the Government in private business to a still greater degree.

The representatives of the company insisted that the private production of helium is essential to the development of commercial lighter than air activities and stated there is a sufficient supply of helium for commercial as well as Government requirements for years.

The records showed that the Helium company had erected its plant and begun shipments within 6 months or sooner than airships could be constructed. This demonstrated that it could increase its operation on short notice to take care of whatever quantity of helium was required provided only it is assured of a sufficient market to warrant the additional investment.

Emphasis was laid upon the statement that with a modern helium plant and an ample gas supply at Amarillo the Government is all the more justified in purchasing helium from private concerns because it is thus securely protected

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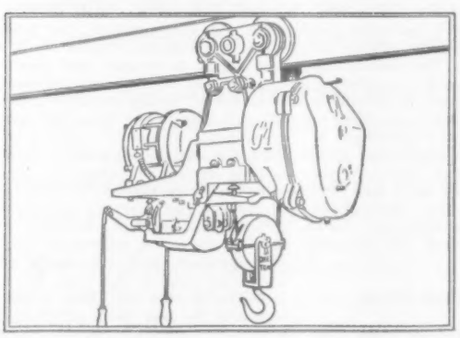

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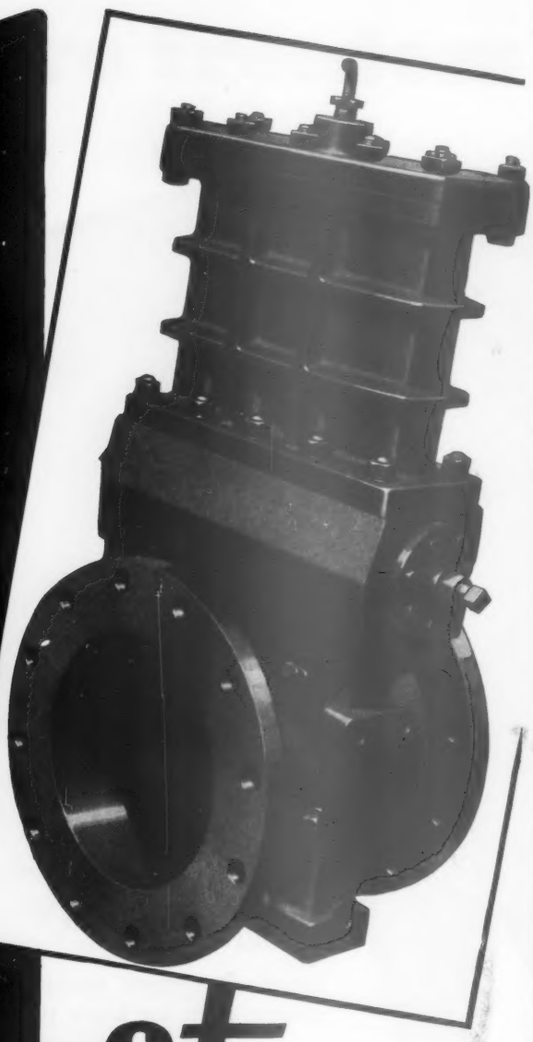

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against either excessive price or the failure of industry to perform.

The Helium company indicated its willingness to produce helium from Government sources and with Government equipment at a lower price than the Government cost of production.

Director Turner was referred to as having testified his belief in the existence of sufficient available helium in the Amarillo district of Texas alone to produce 20,000,000 feet a year for 50 or 60 years.

Helium has never been available for private industry so it is not possible to give an adequate opinion in respect to the demand that would be created for it. But it is known that due to its unusual character electrically as well as physically and due to its noninflammability it has been used as a cooling medium for electric equipment, as the filling gas for radio tubes and colored lights, as the gaseous medium in mercury, arc rectifiers, as a heat insulating medium in high temperature furnaces, as a medium for preventing oxidation in the hot working of rare metals, as a substitute for nitrogen in synthetic atmospheres, particularly useful in diving operations for dampening instruments and for other uses. All of these uses are still in experimental stage because up to 1928 no helium was available for private purposes.

Industry Invited

The helium industry was initiated in 1917 as a war measure. When before the committee on interstate and foreign commerce of the House of Representatives, May 21, 1920, Van H. Manning, Director of the Bureau of Mines, submitted a history of the helium industry up to that time and when asked his opinion in respect to the bill pending before the committee he said:

"I am sorry I will have to take issue with certain phases of this bill unless it is modified so as to encourage and not discourage private enterprise."

Expressing himself in favor of a commercial helium industry, he said he felt that any private individual who wants to go into the manufacture of helium for commercial purposes ought to be encouraged to do it. He wanted this vanuable noninflammable gas utilized and not allowed to go to waste in the air.

It was because of the various encouragements held out that the Kentucky Oxygen-Hydrogen Co. in March, 1927, formed a subsidiary company known as the Helium Co., and negotiated a contract with the Navy Department providing for delivery of 3,780,000 feet of helium at a price of $34.77 per 1,000, which was equivalent to about $35.40 per 1,000 feet on a contained helium basis. The company now has a total investment of approximately $333,000. The plant it was declared at present has sufficient capacity for all Government needs for helium and is delivering helium with an average purity of 96.7 per cent and the company is willing to increase its capacity as rapidly as the demand increases.

It is expected that the committee appointed by President Hoover after considering the evidence will announce the policy in respect to helium production they expect to pursue. The dominating question before this committee is whether helium is of such a nature it should be produced by the Government, or whether the time has come for the Government to retire from the helium production business and adopt the same policy in respect to that commodity as it has pursued in respect to all other commodities it obtains from private industry. This announcement it is believed will be made in the near future.

JOHN L. HUNTER DEAD

John Lee Hunter, aged 70 years, died at the home of his son, Robert Hunter, at Sharon, Pa. He was an old-time oil news writer and worked for the Boyle publications for a number of years. He was a field man for the Oil City Derrick in the early history of that paper when it was first taken over by the late P. C. Boyle. His death was due to a cancer.

FURTHER OVERLAPPING IN EAST COAST MARKETING

(Continued from Page 158)

secure maximum realization from its crude oil, and will effect very substantial savings in the cost of transportation of its products. The policy of developing market outlets for gasoline and other light products in the eastern and southern states has ben energetically continued by the company, and, said Mr. Stewart; "Satisfactory progress has also been made toward developing new markets for the additional gasoline production which will be available upon completion of the cracking plant at Aruba."

Standard Oil Co. of New Jersey's entrance into the marketing field in New York, Pennsylvania and New England has been accomplished with little disturbance to these markets, owing to the fact that Beacon Oil Co., prior to its passing under control of the New Jersey company, was solidly entrenched in these areas.

While Vacuum Oil Co. some months ago announced that it was proceeding with its plans for developing gasoline production and marketing, and that it would concentrate its efforts in this direction in the East Coast territory at the outset, nothing much has been heard of further steps.

Standard Oil Co. of New York, whose territory has been invaded by all of the new interests in the gasoline marketing business in the East, as well as several of the large companies which formerly operated in Atlantic Coast territory, but which previously remained out of New York's "home" markets, is expected to have a development program of its own shortly. Thus far, the company has concentrated its domestic gasoline marketing operations in New York, Massachusetts, Maine, New Hampshire, and Vermont. For the past several years, however, the New York company has been conducting a radio advertising campaign which has built up considerable good-will for its products virtually throughout the entire East Coast area, and has also been conducting a map and road service for tourists second to none. The latter has been used by motorists all over the country, but particularly so in the Atlantic Coast states. Thus, the company already has an enormous amount of good-will and potential patrons for its products in many Eastern States in which it is not now operating, but into which an expansion program would logically carry it. Whether this expansion program is waiting upon the establishment of new refining capacity is not yet determined, although at various times within the past few years, the New York company has been reported contemplating the establishment of a large new refinery at some spot near New York City.

While all of the "new" companies mentioned have now been operating in East Coast territory for the past few months, there is no indication thus far that the development programs of any of these marketers will involve price wars. On the contrary, the tankwagon situation throughout the Atlantic Coast, as a whole, is sounder now than it was at the start of the year, a number of "sore spots" having recently been wiped off the distributing map by price readjustments at points where local price wars had been in progress. It is notable, in this connection, that the local disturbances were directly caused, in practically all instances, by the operations of small independent refiners, rather than by the selling policies of any of the new interests which have entered the marketing field in the East this year.

Assuming that the East Coast territory will be free from anything in the nature of a general price war during the summer months, and that refiners and marketers will thus be enabled to obtain a normal margin of profits on their gasoline operations, the current year should be one of the most profitable in the history of the industry for marketers and large integrated companies in this section.

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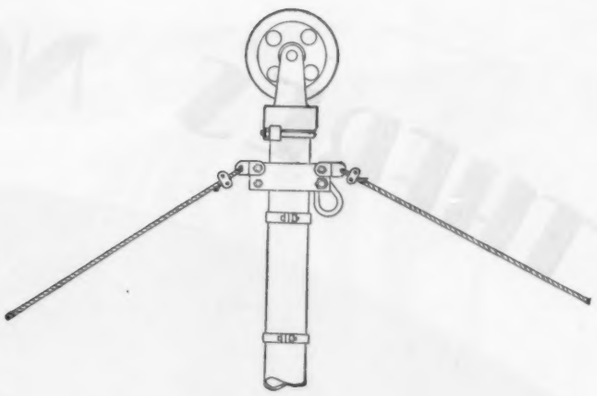

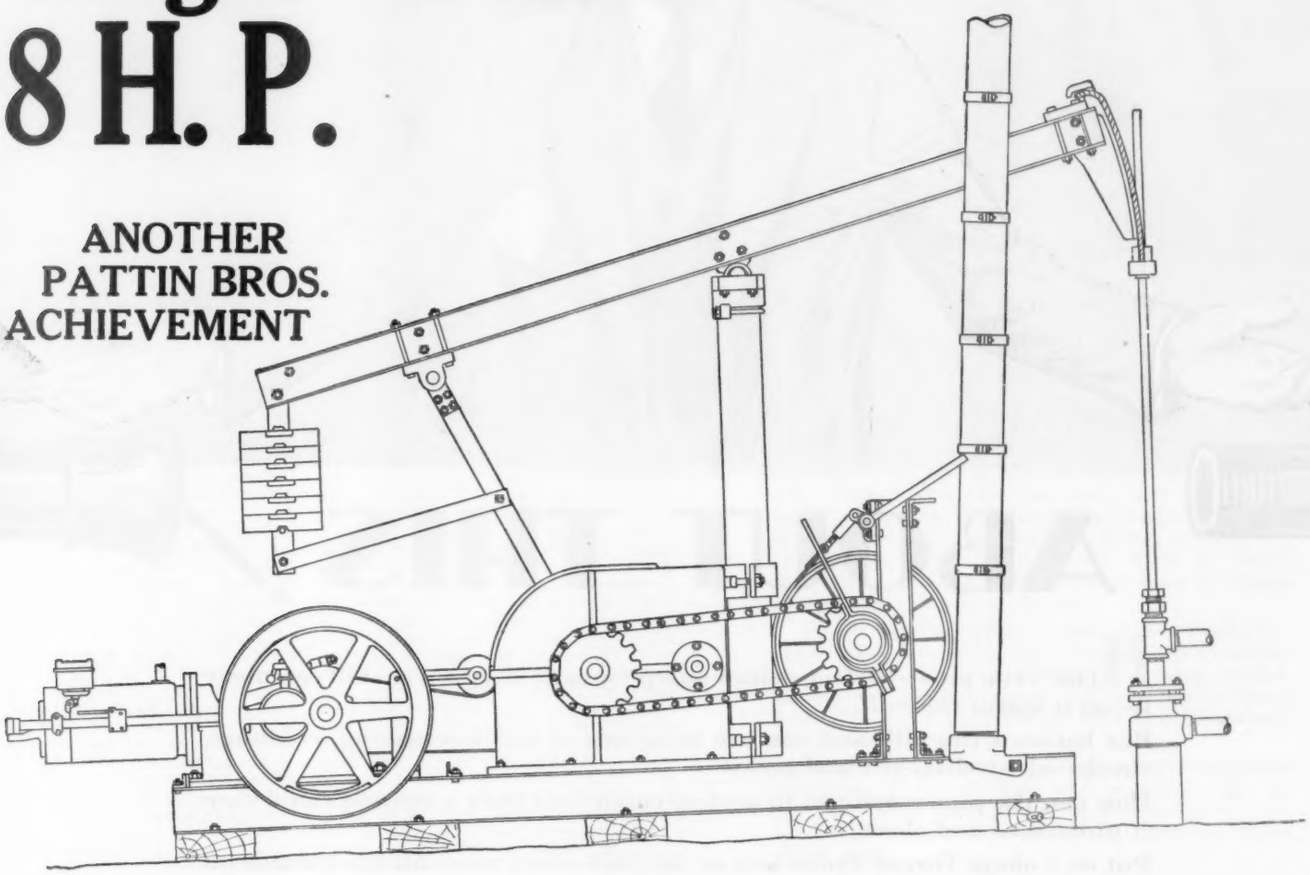

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Gulf Production Co.'s No. 1 C. R. Garner and others-B, 330 feet north and west of the SE cor. of the SW of Section 106, Block 4, I.&G.N. Survey. Same company's No. 7 J. L. Noel, 330 feet south and west of the NE cor. of the SW of Section 198, Block 3, I.&G.N. Survey. Herrogan Oil Co.'s No. 1 L. C. McConnell, 330 feet south and east of the NW cor. of the W half of the SW of Section 187, Block 3, I.&G.N. Survey.

Gray County

Gulf Production Co.'s No. 8 J. B. Bowers-A, 330 feet south and 990 feet east of the NW cor. of the W half of Section 89, Block B-2, H.&G.N. Survey. Same company's No. 9 J. B. Bowers-A, 1,650 feet north and 330 feet west of the southeast corner of Gulf Production Co.'s 160-acre lease out of Section 89, Block B-2, H.&G.N. Survey. Same company's No. 10 J. B. Bowers-A, 330 feet south and west of the northeast corner of Gulf Production Co.'s 160-acre lease out of Section 89, Block B-2, H.&G.N. Survey. Same company's No. 11 J. B. Bowers-A, 330 feet south and 990 feet west of the northeast corner of Gulf Production Co.'s 160-acre lease out of Section 89, Block B-2, H.&G.N. Survey. Same company's No. 5 William Jackson, 330 feet north and west of the southeast corner of Gulf Production Co.'s 160-acre lease out of Section 62, Block B-2, H.&G.N. Survey. Same company's No. 7 William Jackson, 330 feet south and west of the northeast corner of the Gulf Production Co.'s 160-acre lease out of Section 62, Block B-2, H.&G.N. Survey. Same company's No. 11 J. B. Bowers-A, 330 feet south and 990 feet west of the northeast corner of Gulf Production Co.'s 160-acre lease out of Section 89, Block B-2, H.&G.N. Survey.

Osborn and others' No. 1 J. S. Morse-A, 330 feet north and east of the SW cor. of the S half of the NE of Section 1, Block 26, H.&G.N. Survey. Sherwood and others' No. 1 A. E. Gething estate, 330 feet north and west of the SE cor. of the N half of the NE of Section 14, Block A-9, H.&G.N. Survey. The Texas Company's No. 11 G. H. Saunders, 400 feet south and 521 feet west of the NE cor. of Section 3, B.&B. Survey. Magnolia Petroleum Co.'s No. 1 J. E. Wright, 330 feet north and east of the SW cor. of the S half of the SW of Section 13, Block 3, I.&G.N. Survey. Phillips Petroleum Co.'s No. 4 J. H. Palmer, 330 feet south and east of the northwest corner of the east 83.1 acres of Section 31, Block B-2, H.&G.N. Survey.

Skelly Oil Co.'s No. 1 William Jackson "East," 330 feet north and east of the SW cor. of the E half of Section 62, Block B-2, H.&G.N. Survey. Same company's No. 2 William Jackson "East," 330 feet south and east of the NW cor. of the E half of Section 62, Block B-2, H.&G.N. Survey. Same company's No. 2 William Jackson "North," 330 feet north and 990 feet east of the SW cor. of Section 90, Block B-2, H.&G.N. Survey. Same company's No. 3 William Jackson "North," 330 feet north and west of the southeast corner of the west 190.5 acres of Section 90, Block B-2, H.&G.N. Survey. The Texas Company's No. 9 J. B. Bowers, 330 feet south and 975 feet west of the NE cor. of Section 89, Block B-2, H.& G.N. Survey.

The Texas Company's No. 10 J. B. Bowers, 330 feet south and west of the NE cor. of Section 89, Block B-2, H.& G.N. Survey. Same company's No. 11 J. B. Bowers, 330 feet north and 990 feet west of the SE cor. of Section 89, Block B-2, H.&G.N. Survey. Same company's No. 12 J. B. Bowers, 330 feet south and east of the NW cor. of the NE of Section 63, Block B-2, H.&G.N. Survey. Same company's No. 13 J. B. Bowers, 990 feet south and 330 feet east of the NW cor. of the E half of Section 89, Block B-2, H.&G.N. Survey. Same company's No. 1 W. Jackson, 330 feet north and east of the southwest corner of the east 175.6 acres of Section 60, Block B-2, H.&G.N. Survey.

Hutchinson County

Marland Production Co.'s No. 2 K. Riemer and others, 3,753 feet south and 450 feet east of the northwest corner of the south 320 acres of Section 31, Block 47, H.&T.C. Survey. Prairie Oil & Gas Co.'s No. 4 Diana Shaw, 330 feet south and 990 feet west of the NE cor. of Section 27, Block Y.

Wheeler County

Angus and others' No. 1 E. A. Linkey, at the C of the NE of the NW of Section 126, Block 23, H.&G.N. Survey. Upham Gas Co.'s No. 2 I. Close (Gooch), 330 feet north and west of the SE cor. of the N half of the SE of Section 81, Block 23, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Burns' No. 1 L. F. Wilson (McCrory, trustee) "M," 150 feet north and east of the SW cor. of the SE of Lot 4, Section 114, A.T.N.C.L. Survey. Gwynn-Boyd Drilling Co.'s No. 3 A. D. Thompson, 450 feet south and 150 feet east of the NW cor. of Lot 16, Section 20, A.T.N.C.L. Survey. Kemrow Production Co.'s No. 5 J. W. Campbell, 150 feet north and east of the southwest corner of the J. W. Campbell 65.8-acre tract out of Section 1, Denton County School Land, League 3, A-117. Payne and others' No. 4 Mrs. J. E. Parrish-A, 150 feet south and 750 feet east of the northwest corner of the east 20 acres of the west 50 acres of the north 100 acres of the Mrs. J. E. Parrish 320-acre tract out of Section 2, S.P.R.R. Survey, A-1,004. Jim Turner's No. 1 Belle Z. Lyles, 1,170 feet south and 660 feet west of the NE cor. of the SW of Section 2, S.P.R.R. Survey, A-1,-231. Bridwell Oil Co. and others' No. 1 W. J. Logan and others, 1,256 feet south and 2,625 feet east of the southeast corner of the C. Campbell 200-acre tract out of the A. Arms Survey, A-5, and located in Section 25, J. M. Taylor Survey, A-648, being 150 feet north and 1,-002 feet east of the southwest corner of their 132-acre lease. Same company's No. 2 W. J. Logan and others, 1,256 feet south and 2,925 feet east of the southeast corner of the C. Campbell 200-acre tract out of the A. Arms Survey, A-5, and located in Section 26, J. M. Taylor Survey, A-650, being 150 feet north and 1,302 feet east of the southwest corner of their 132-acre lease.

Continental Oil Co.'s No. 4 J. T. Richardson-B, 500 feet south and 479 feet east of the NW cor. of Section 10, Thomas McCoy Survey, A-269. F. P. Cullum and others' No. 2 Falls County School Land, 600 feet north and 200 feet west of the SE cor. of Section 9, Falls County School Land, A-130. Fain-McGaha and Humble Oil & Refining Co.'s No. 2 W. J. Logan and others-A, 1,556 feet south and 2,625 feet east of the southeast corner of the C. Campbell 200-acre tract out of the A. Arms Survey, A-5, and located in Section 25, J. M. Taylor Survey, A-650, being 150 feet south and 1,002 feet east of the northwest corner of their 150-acre lease "A." F. C. Grebin's No. 1 W. T. Graham, 150 feet north and 450 feet east of the SW cor. of the SW of Section 23, G. P. Meade Subdivision, L. M. Pasture. B. C. McCarty and others' No. 1 Curtis Lane, 150 feet south and 204 feet west of the most northerly NE cor. of Section 46, G. P. Meade Subdivision, L. M. Pasture. Underwood Drilling Co. and others' No. 3 R. D. Andrews, 150 feet south and 1,050 feet east of the NW cor. of the N half of the SW of Section 1,805, T.E.&L. Survey.

Callahan County

Bradstreet & Holden's No. 2 J. L. Cavanaugh-A, 150 feet south and 200 feet east of the northwest corner of the north 60 acres of the E half of Section 98, Comal County School Land. Same company's No. 3 J. L. Cavanaugh-A, 850 feet south and 200 feet east of the northwest corner of the north 60 acres

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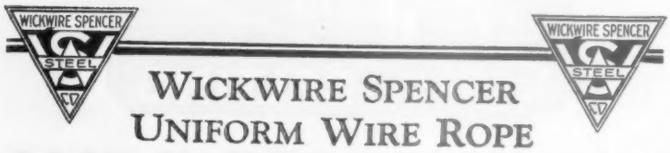

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of the E half of Section 98, Comal County School Land.

Clay County

Mid-Continent Holding Co.'s No. 1 J. D. Stine and others-D, 150 feet north and east of the SW cor. of the NE of Section 7, Parker County School Land, A-374.

Coleman County

Simpson-White & Pinkerton's No. 2 Fannie Shirmacher, 960 feet north and 837 feet east of the SW cor. of Section 6, South Subdivision, M. Martinez Survey No. 751.

Cooke County

Lloyd Oil Co.'s No. 1 Mrs. H. W. Stark, 150 feet north and east of the southwest corner of the Mrs. H. W. Stark 80-acre tract out of the N. R. Reed Survey, A-870. Kewanee Oil & Gas Co.'s No. 1 W. A. Hair, 446 feet north and 150 feet west of the southeast corner of the W. A. Hair 121-acre tract out of the C. Lockhart Survey, A-605. The Texas Company's No. 1 J. C. Embry, 1,358 feet north and 150 feet west of the southeast corner, of the Robert Rogers Survey A-859.

Crane County

Gulf Production Co.'s No. 65 J. T. McElroy, 2,102 feet south and 4,620 feet east of the northwest corner of the Gulf Production Co.'s lease out of Section 200, Block F, C.C.S.D.&R.G.N.G.R.R. Survey.

Eastland County

Lewis & Moore and others' No. 2 Mrs. Ida B. Foster, 490 feet north and 160 feet west of the SE cor. of the W half of the NW of Section 27, Block 2, H.& T.C. Survey.

G. W. Price's No. 3 Mrs. O. C. Holcomb and others, 1,407 feet south and 1,152 feet east of the northwest corner of the Mrs. O. C. Holcomb and others 623-acre tract out of the J. House Survey. Southern Oil & Production Co.'s No. 1 C. T. Webb, 750 feet south and 150 feet east of the northwest corner of the east 80 acres of the NW of Section 26, Block 2, H.&T.C. Survey. Belva Oil Co.'s No. 8 Frank Good, 258 feet north and 330 feet east of the SW cor. of the SE of Section 56, B.B.B.&C. Survey. Brannon & Murray's No. 1 J. O. Adams, 450 feet south and east of the NW cor. of the E half of the NE of Section 30, Block 2, H.&T.C. Survey. J. Meyers and others' No. 1 T. O. Byrd, 150 feet south and east of the northwest corner of the T. O. Byrd 60-acre tract out of Section 30, Block 2, H.&T.C. Survey. S. B. Owens, Inc.'s No. 1 L. C. Turner and others, 450 feet north and 150 feet east of the SW cor. of the NW of the NE of Section 30, Block 2, H.&T.C. Survey.

Erath County

Associated Prod. Co's No. 2 W. B. Cary, 1125 feet south and east of the northwest corner of the W. B. Cary 199-acre tract out of the J. M. Espinosa Survey. Cranfill-Reynolds & Amerada No. 1 M. L. Gibson, 600 feet north and east of the southwest corner of the M. L. Gibson 250 acre tract out of the Josiah Bishop Survey.

Fisher County

Cranfill & Reynolds No. 1 William Flannigan, 990 feet north and east of SW cor., Section 200, B.B.B.&C. Survey. Roeser-Pendleton and Amerada's No. 1-A A. T. Haught, 590 feet south and 1,320 feet east of the NW cor. SW, Section 191, B.B.B.&C. Survey.

Glasscock County

Houston Oil Co. and others No. 1 L. S. McDowell, 330 feet south and 2310 feet west of the NE cor. of Section 30, Block 33, T-2-S, T.&P. Survey. Kirby Petroleum Co. and others No. 1 J. J. Phillips, 330 feet south and 2310 feet east of the NW cor. of Section 23, Block 33, T-2-S, T.&P. Penn Oil Co.'s No. 1 C. Schaffer, 1,320 feet north and 2,640 feet west of the SE cor. of Section 4, Block 32, T-3-S, T.&P. Survey.

Haskell County

E. Evans and others No. 1 Reynolds Cattle Co.'s, 400 feet south and 2,786 feet east of the northwest corner of the J. Fenner Survey A-582.

Howard County

Cosden Oil Co.'s No. 5 Dora Roberts-A, 200 feet north and 2440 feet west of the SE corner of Section 129, Block 29, W.&.N.W.R.R. Survey.

Irion County

Pecos Valley Oil Co.'s No. 2 Joe Stocks, 1,020 feet north and east of the SW corner of Section 19, Block 3, H.&.T.C. Survey.

Jack County

Buttram Petroleum Co.'s No. 1 C. K. Cullers-Graham Etsate. "C", 232 feet south and 200 feet east of the SW cor. of Section 5, S.P.R.R. Survey, A-550 and located in the S. M. Holderness Survey A-1532. F. H. E. Oil Co.'s No. 2 J. M. Daugherty, 200 feet north and 715 feet west of the southeast cor. of the J. M. Daugherty 227 acre tract out of the I. Hughson Survey A-256. Osage Oil Corp.'s No. 1 Sam Newman, 660 feet south and 780 feet west of the northeast cor. of the NE 40 acre (square) of the Sam Newman 202 acre tract out of the Nancy P. Overby Survey A-452. Petroleum Products Co. & The Texas Company's No. 2 H. C. Shanafelt, 330 feet south and 300 feet east of the northwest cor. of their 40 acre lease out of the Isaac Hughson Survey A-256.

Jones County

Grisham-Hunter Corp.'s No. 2 J. W. Tiner, 165 feet north and 630 feet west of the southeast cor. of the Gab. Zumwalt Survey No. 279. Phillips Petroleum Co.'s No. 2 M. C. Lou, 990 feet south and east of the northwest cor. of Section 15, Block 19, T.&.P. Survey. F. E. Shaheen's No. 1 S. W. King, 2,164 feet south and 1,960 feet west of the northeast cor. of the M. Bueno Survey No. 197, A-14.

Mitchell County

The California Co.'s No. 1 J. J. Handley, 2,310 feet north and 1,650 feet west of the southeast cor. of Section 1, Block 28, T-1-N, T.&.P. Survey.

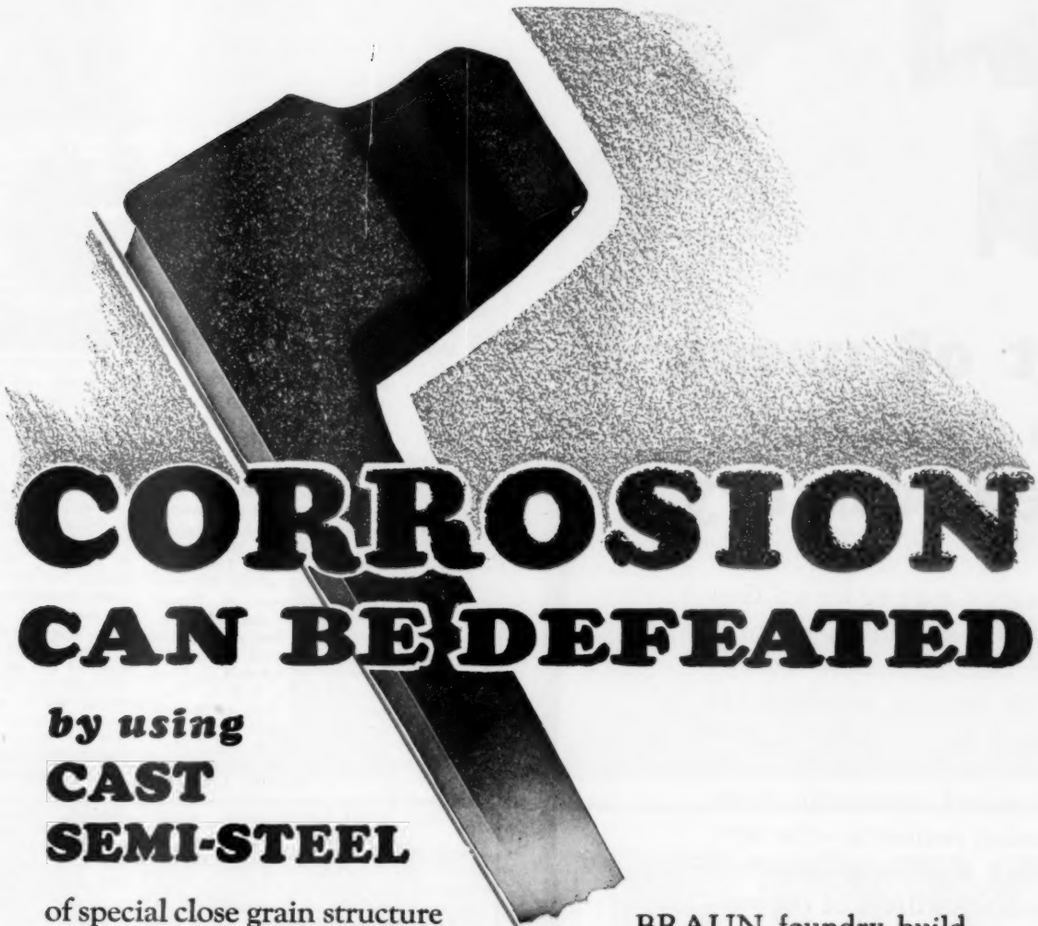
Scurry County

Texas Canadian Oil Co.'s No. 1 J. Wright Mooar, 1,320 feet north and west of the southeast cor. of Section 379, Block 97, H.&.T.C. Survey.

Shackelford County

Ackerman & Scriven's No. 1 L. H. Hill, 525 feet south and 800 feet west of the NE cor. of the NW of Section 37, Blind Asylum Land. Cranfill & Reynolds No. 2 R. J. Moberly-B, 700 feet north and 1,250 feet west of the SE cor. of Section 48, Block 11, T.&.P. Survey. Grisham Hunter Corp.'s No. 2 G. R. Davis, 150 feet north and east of the SW cor. of Section 17, Block 13, T.&.P. Survey. J. T. Hogan's No. 1 E Flippen, 1,300 feet north and 1,825 feet east of the SW cor. of Section 36, Block 11. T.&.P. Survey being 1300 feet north and 150 feet west of the southeast cor. of his 100 acre lease. Humble Oil & Refining Co.'s No. 2 W. P Newell, 950 feet south and 1300 feet east of the NW cor. of Section 87, Block 10, E.T.R.R. Survey. J. L. McMeans No. 1 T. J. Crow, 150 feet south and west of the northeast cor. of the southeast 50 acres of the west 100 acres of Section 1,532 T. E. & L. Survey, Manning and others' No. 3 R. J. Moberly, 150 feet north and 450 feet east of the southwest cor. of their 200 acre lease out of Section 11, Block 11, T.&P. Survey. Roeser & Pendleton's No. 41 W. I. Cook-A, Section 61, 396 feet south and 1,449 feet west of the NE cor. of the SE of Section 61, Block 10, E.T.R.R. Survey.

Roeser & Pendleton's No. 42 W. I. Cook-A, Section 61, 807 feet south and 2,693 feet east of the NW cor. of Section 61, Block 10, E.T.R.R. Survey. Some company's No. 12 W. I. Cook-A, Section 83, 1,660 feet south and 220 feet west of the NE cor. of Section 83, Block 10, E.T.R.R. Survey. Same company's No. 4 W. I. Cook-A, Section 88, 700 feet north and 1,950 feet east of the SW cor. of the NW of Section 88, Block 10, E.T.R.R. Survey. Same company's No. 5 W. I. Cook-A, Section 88, 248 feet north and 1,516 feet east of the SW cor. of the NW of Section 88, Block 10, E.T.R.R. Survey. Same company's No. 6 W. I. Cook-A, Section 88, 150 feet south and 1,950 feet east of the NW cor. of the SW of Section 88, Block 10, E.T.R.R. Survey. H. Shulman's No. 1 K. B. Green, 150 feet north



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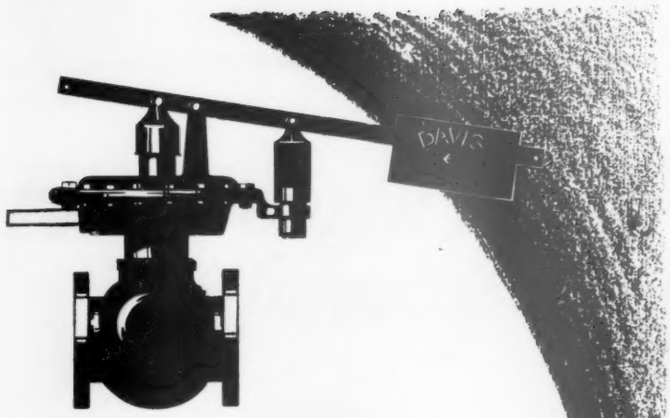

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and east of the SW cor. of the NE of Section 1,548, T.E.&.L. Survey. H. Slicker's No. 3 J. B. Matthews, 450 feet south and 1,200 feet east of the NW cor. of the SE of the NW of Section 58, Block 10, E.T.R.R. Survey.

Stephens County

Lone Star Gas Co.'s No. 1 I. A. Galloway, 1,000 feet south and east of the NW cor. of Section 461, S.P.R.R. Survey. Same company's No. 1 J. M. Townsend, 987 feet south and 660 feet west of the NE cor. of the J. M. Townsend 120 acre tract out of Section 1, Block C, S.P.R.R. Survey. Texas Pacific Coal & Oil Co.'s No. 4 Mrs. S. A. Pierce, 1,700 feet south and 500 feet east of the NW cor. of the SW of Section 45, Block 6, T.&.P. Survey.

Throckmorton County

Conway Brothers & Woodson Oil Co.'s No. 3 J. G. Overcash, 466 feet north and 766 feet east of the SW cor. of Section 960, T.E.&.L. Survey.

Ward County

Gulf Production Co.'s No. 1 Wristen Brothers, 217 feet southeast of the NW line and 1,107 feet northeast of the SW line of Section 18, Block 5, H.&.T.C. Survey.

Wichita County

Gulf Production Co.'s No. 20 G. Jennings, 150 feet north and 660 feet west of the SE cor. of the west half of the NE of Section 12, H.T.&.B. Survey. Gulf Production Co.'s No. 9 G. Jennings and others, 3,000 feet north and 150 feet west of the SE cor. of Gulf Production Co.'s 280 acre lease out of Section 8, H.T.&.B. Survey, A-475. R. Mount and others No. 1 B. H. Preston, 1,050 feet south and 250 feet west of the NE cor. Section 7, R.R.V.L. Survey. H. Hines' No. 6 T. L. Burnett and others-A, 750 feet north and 150 feet east of the SW cor. of the east 25 acres of the SW of the SE of Section 6, S.A.&.M.G. Panhandle Refining Co.'s No. 6 T. L. Burnett and others-A, 150 feet north and 450 feet west of the SE cor. of the NW of the SE of Section 6, S.A.&.M.G. Survey, A-464. Rubsam & Hunter and others No. 5 W. D. McClure, 1,800 feet south and 800 feet west of the NE cor. of Section 5, G.C.&.S.F. Survey, A-363.

Winkler County

Gulf Production Co.'s No. 3 Ida Hendricks, 330 feet south and west of the northeast cor. of Gulf Production Co.'s 160 acre lease out of Section 44, Block 26, School Land. Southern Crude Oil Purchasing Co.'s No. 33 T. G. Hendricks T-88-M, 2,530 feet south and 990 feet west of the northeast cor. of Section 33, Block 26, School Land. Same company's No. 34 T G. Hendricks T-88-M, 1,980 feet north and 990 feet west of the SE corner of Section 33, Block 26, School Land. Same company's No. 1 T. G. Hendricks T-89-L, 440 feet south and 330 feet east of the NW cor. of Section 15, Block B-12, School Land.

Wilbarger County

Bradstreet Co. & Grisham's No. 1 W. T. Waggoner, 250 feet north and 750 feet east of the southwest cor. of the south half of the NE 160 acre (square) out of Section 37, Block 4, H.&.T.C. Survey. Consolidated Oil Co.'s No. 4 W. T. Waggoner-O, 150 feet south and west of the NE cor. of the N. half of the NW of section 40, M.E.P.&P. Survey. Derby Oil Co.'s No. 1 W. T. Waggoner-D, 150 feet south and west of the NE cor. of the W. half of the SW of the SE of Section 8, Block 4, H.&T.C. Survey. Empire Gas & Fuel Co.'s No. 13 W. T. Waggoner-B, 90 feet south and 205 feet east of the NW cor. of the SW of the SW of Section 32, Block 4, H.&.T.C. Survey.

Empire Gas & Fuel Co.'s No. 14 W. T. Waggoner-B, 1,710 feet north and 1,059 feet east of the SW cor. of Section 32, Block 4, H.&.T.C. Survey. Same company's No. 15 Waggoner-B, 1,160 feet north and 1,609 feet east of the SW cor of Section 32, Block 4, H.&.T.C. Survey. Same company's No. 16 Waggoner-B, 850 feet north and 1,059 feet east of the SW cor. of Section 32, Block 4, H.&T.C. Survey. Gray Back Development Co.'s No. 2 Waggoner (Boggy Creek), 830 feet south and 3,090 feet east of the NW cor. of Section 40, M. E. P. &P. Survey. Same company's No. 3 Waggoner (Boggy Creek) 490 feet south and 3,090 feet east of the NW of Section 40, M.E.P.&P. Survey. Same company's No. 4 Waggoner (Boggy Creek), 490 feet south and 3,090 feet east NW cor. Section 40, M.E.P.&P. Survey. Same company's No. 5 (Boggy Creek), 1,810 feet south and 3,090 feet east of the NW cor. of Section 40, M.E.P.&P. Survey.

G. W. Peckham's No. 1 W. T .Waggoner-A, 150 feet north and 450 feet west of the SE cor. of the E half of the SW of Section 21, Block 4, H.&.T.C. Survey. Phillips Petroleum Co.'s No. 3 W. T. Waggoner-DD, 330 feet north and east of the SW cor. of their 39.5 acre lease "DD" out of Section 42, Block 4, H.&.T.C. Survey. Richfield Oil Co.'s No. 2 Waggoner-A, 920 feet south and 704 feet west of the NE cor. of Section 10, Block 4, H.&T.C. Survey.

Shaw Oil Co.'s No. 5 Waggoner-G, 490 feet south and 2,790 feet east of the NW cor. of Section 40, M.E.P.&P. Survey. Staley-Wynne & Co.'s No. 5 Waggoner-G 547 feet south and 153 feet west of the NE cor. of the W half of the SE of Section 32, Block 4, H.&T.C. Survey. Same company's No. 6 Waggoner-G, 150 feet south and 152 feet west of the NE cor. of the W half of the SE of Section 32, Block 4, H.&T.C. Survey. Same company's No. 7 W. T. Waggoner-G, 150 feet south and 455 feet west of the NE cor. of the W half of the SE of Section 32, Block 4, H.&T.C. Survey.

Staley-Wynne & Co.'s No. 1 Waggoner-Y, 660 feet north and west of SE cor. of the SE of the SW of Section 30, Block 4, H.&.T.C. Survey. The Texas Company's No. 363 W. T. Wagoner, 330 feet south and 278 feet west of the NE cor. of Section 4, Block 13, H.&T.C. Survey. The Texas Company's No. 364 Waggoner, 990 feet north and 2,150 feet west of the SE cor. of Section 7, Block 13, H.&T.C. Survey. Ven-Mex Oil Co.'s No. 1 W. T. Waggoner, 150 feet north and west of the SE cor. of the SE of the NW of Section 16, Block 4, H.&T.C. Survey. Waggoner Refining Co.'s No. 4 W. T. Waggoner-J, 205 feet south and east of the NW cor. of the west half of the NE of Section 25, Block 4, H.&T.C. Survey. Wichison Oil Corp's No. 1 Waggoner, 150 feet north and west of the SE cor. of the west half of the SW of Section 21, Block 4, H.&T.C. Survey.

Young County

J. D. Carpenter's No. 1 M. Barrett, 150 feet south and east of the northwest corner of the north 60 acres of the M. Barrett 225 acre tract out of the Edward W. Sergeant Survey A-253.

Corrections

Eastland County: Dyer Brothers No. 2 L. P. Cunningham-B, 450 feet south and 150 feet east of the NW cor. of B. H. Epperson Survey.

Gray County: The Texas Company's No. 3 Purviance and others, 275 feet north and 1,406 feet east of the SW cor. of Section 61, Block B-2, H.&.G.N. Survey. Sun Oil Co.'s No. 2 Purivance and others, 276 feet north and 358 feet west of the SE cor. of the west 80 acres of Section 61, Block B-2, H.&G.N. Survey.

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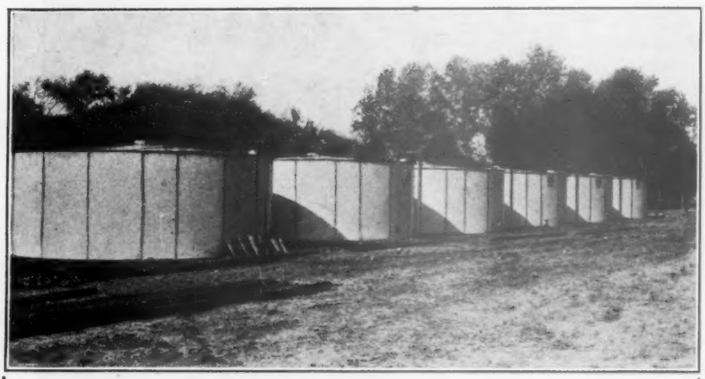

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DETERMINING GASOLINE CONTENT OF NATURAL GAS

(Continued from Page 48)

points occurring in the original gas, and in addition as much normal butane as may be incorporated without exceeding the fixed vapor pressure (p) at the temperature (T.) It will include no isobutane, propane, or hydrocarbons of lower boiling points. Such a condensate is a definite substance which can be determined quantitatively.

Basis of Identification

Accepting this concept as a reasonable basis of identification we may then define the natural gasoline content as the hydrocarbon condensate derived from natural gas which is composed of the total percentages of pentane plus higher boiling hydrocarbons occuring as vapors in the natural gas, plus a sufficient percentage of normal butane to cause the total condensate to possess a specified saturation pressure (p) at a specified temperature (T.)

The method described in this paper may be used to determine this natural gasoline content. The assignment of desirable values for (p) and (T) is not attempted, this matter being in the hands of the industry. Rather, in the present work, (p) was determined over a relatively wide range with (T) held constant, so that it is possible to compute the amount of this maximum condensate possessing any convenient saturation pressure at (T.) These data are useful in connection with blending or other special problems of the industry. Further, (p) may be determined for various values of (T). The value 100 degrees Fahrenheit was used for (T) in the present work, being selected with reference to shipping regulations. If it is desired to accept the corresponding limiting figure of 10 pounds per square inch for vapor tension, we are in a position to definitely state the amounts of "natural gasoline," and analogously those of "casinghead gasoline" (not over 20 pounds per square inch at 100 degrees Fahrenheit) and "liquefied petroleum gas" (over 20 pounds per square inch at 100 degrees Fahrenheit) in the natural gas.

Principle of Analytical Method

With the development of a definition for the term "natural gasoline" content, it is possible to establish an analytical method for the determination of the natural gasoline content of any natural gas.

The method developed is briefly outlined:

1. The natural gas sample is separated by a system of isothermal fractional distillations into three fractions:

The first consists of isobutane, propane and hydrocarbons of lower boiling points, together with nitrogen, and traces of oxygen, carbon dioxide and rare gases, if present.

The second consists of normal butane.

The third consists of pentanes and hydrocarbons of higher boiling points.

2. The volumes of the first and second fractions are measured in the vapor phase at 60 degrees Fahrenheit, 30 inches of mercury. The volume of the pentane fraction is determined in the vapor phase by difference, and in the liquid phase by direct measurement at 32 degrees Fahrenheit.

3. The maximum vapor pressure of the pentane fraction is measured at a fixed temperature (T). Measured increments of the butane fraction are then recondensed into the pentane fraction, and the increase of maximum vapor pressure at T is noted for each condensate so obtained.

Curve Shows Percentage

From the data obtained as above, a curve is constructed to show percentage (in the vapor phase) of hydrocarbon condensate originally present in the natural gas, plotted against its vapor pressure (when condensed) at the fixed temperature. Each percentage so given is the maximum amount (possible to extract from the natural gas) which will possess the measured vapor pressure at the fixed temperature, since the composition of the condensates represent the hydrocarbons taken in the direct order of their boiling points from high to low.

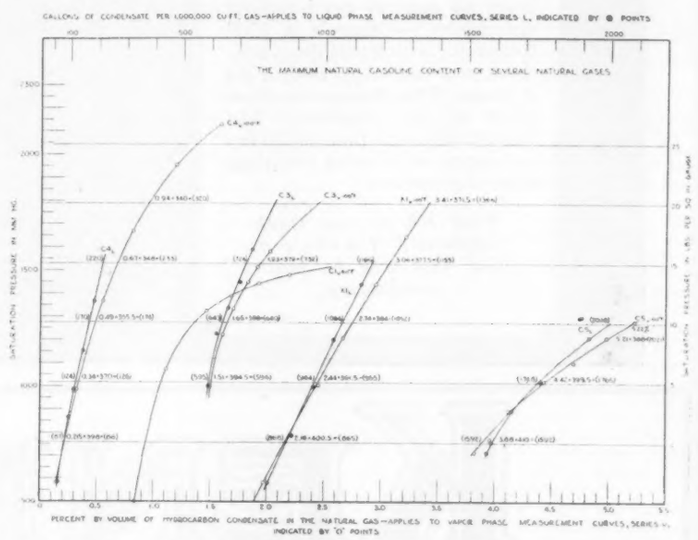
GALLONS OF CONDENSATE PER 1,000,000 CU.FT. GAS—APPLIES TO LIQUID PHASE MEASUREMENT CURVES, SERIES L, INDICATED BY ● POINTS
THE MAXIMUM NATURAL GASOLINE CONTENT OF SEVERAL NATURAL GASES
SATURATION PRESSURE IN LBS. PER SQ. IN. GAUGE
PERCENT BY VOLUME OF HYDROCARBON CONDENSATE IN THE NATURAL GAS—APPLIES TO VAPOR PHASE MEASUREMENT CURVES, SERIES V, INDICATED BY "O" POINTS

Figure 2—The actual natural gasoline content of several natural gases expressed in terms of both liquid and vapor phase determinations.

From the measured liquid volume of the pentane condensate and the known physical data, it is possible to determine factors for transferring the vapor percentages to gallons of condensate per 1,000,000 feet of gas.

4. The liquid volumes of all condensates obtained by combining the butane and pentane fractions (as in procedure 3) may be directly measured. This enables a direct determination in terms of gallons per 1,000,000 feet.

It will be shown that computations from the vapor phase measurements agree with direct measurements in the liquid phase within the accuracy demanded by natural gas engineers.

Apparatus

The apparatus consists of units for measuring gas and liquid volumes, manometers for measuring saturation pressures, pumps for the transference of gas volumes, and a system of distilling and rectifying tubes for effecting the separation of the gas sample. These must be assembled to form one single unit, the various parts of which are interconnected by fused glass joints. Auxiliary apparatus consists of suitable devices for controlling and measuring low temperatures, liquid air containers, and one or more mechanical vacuum pumps such as those employing gears or eccentric cams immersed in oil.

A complete description of the apparatus would be outside the scope of the present paper. Those who may be interested in

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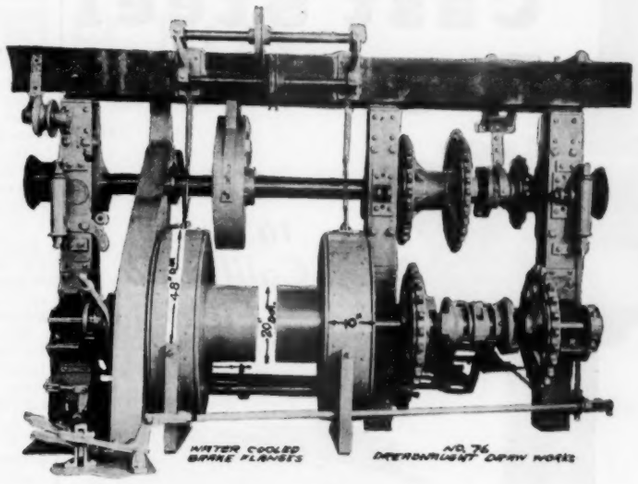

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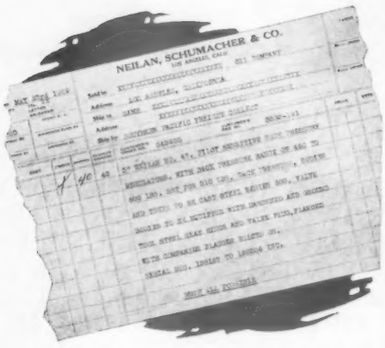

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the construction of such a unit are referred to the original paper on the subject (Research Paper 75, Bureau of Standards Journal of Research, June, 1929). The apparatus is completely described and detailed drawings and photographs of its individual parts are given. These include several types of gas burettes, a special weight burette for the measurement of the pentane fraction with an accuracy of 0.001 ml., an automatic and a manually operated Topler pump, distilling and rectifying tubes, temperature control devices, a differential manometer for measuring the purity of condensates. Many general notes on minor parts of the unit are given. Three separate assemblies are described. These include the original experimental unit, the complete unit recommended for this work, and a simplified unit for commercial laboratories. It should be possible to reconstruct the whole apparatus or any part from the drawings and descriptions given.

In order to convey a general idea of the apparatus, the schematic drawing of the complete unit assembly is reproduced (Figure 1).

Procedure of Analysis

The course taken by a gas sample and the various manipulations to which it is subjected during a single determination may be traced with reference to the assembly diagram.

The sample is introduced at stopcock 11, measured in the burette B_2 and transferred through the capillary distributor train through stopcock 5 to the mercury trap M_1 and thence through stopcock 40 to the distillation train (Tube 2). Here it is separated into the three fractions previously mentioned. The first fraction (isobutane plus lower boiling components) is transferred by pumping and condensation from the distillation train through the pumps V_1 and V_2 and bulb C_3, and by direct condensation to bulb C_1, to the burette B_2, where its volume is determined. It is then stored in the reservoir R_1. The second fraction (normal butane) is removed from the distillation train by direct condensation in the bulb C_1, thence vaporized into the burette B_2 and there measured and retained. The third fraction (pentane and higher boiling hydrocarbons) is measured as a liquid in the burette B_1. It is then transferred by vaporization and condensation to the bulb C_2, and its vapor pressure determined at a chosen fixed temperature. Measured increments of the butane fraction are condensed from the burette B_2 into the mixture contained in the bulb C_2, and the increase of vapor pressure observed for each increment of butane. The mixture of butane with the pentane fraction may also be measured in the liquid phase with each addition of butane. This completes the procedure for a single determination.

A detailed description of the operating technique requires considerable space for presentation, and is accordingly omitted. Complete instructions are given in the original paper, to which reference has previously been made. The procedures have been set forth in considerable detail, since the paper as presented in Bureau of Standards Journal of Research was intended to be a simple instruction book for those who wished to use the method. While each procedure is given in detail, the actual separation of natural gases by isothermal fractional distillation is accorded particular emphasis. A number of fractionation charts illustrating the separation of various types of natural gases are reproduced.

Analytical Results and Accuracy Obtainable

Vapor pressure curves of the mixtures of the pentane and butane fractions, and their analytical significance—In order to illustrate how the data obtained by measurements of the percentages in the vapor phase are recalculated to gallons of condensate per 1,000,000 feet of gas, a number of typical curves are reproduced from experimental data (Figure 2). These cases cover the range from a natural gas containing small percentages of pentane and heavier hydrocarbons to one containing large percentages of the higher boiling hydrocarbons.

Referring to Figure 2, it will be noted that there are two curves for each gas analyzed. The curves marked with symbols which include the subscript V follow observed points. These points are indicated by open circles and represent the results of measurements in the vapor phase. The abscissae of these curves are expressed in terms of per cent by volume of condensable hydrocarbon vapor (pentane fraction plus butane) in the natural gas, and are noted at the bottom.

The curves marked by symbols which include the subscript L, the observed points of which are indicated by crossed circles, represent data obtained by measurements of the liquid phase. Their abscissae are expressed directly in gallons of condensate per 1,000,000 feet of gas, and are noted at the top. The ordinates of both series of curves are expressed in saturation pressures, the scale at the left being in mm and Hg, and that at the right in pounds per square inch gauge.

Example Given

Consider first the series V, or vapor phase measurement curves, and take as an example the curve $C4_V$ (100 degrees Fahrenheit). The lowest point on this curve has an abscissa 0.15 and an ordinate 585.

This means that the pentane fraction which was separated from this gas consisted of 0.15 per cent by vapor volume of the total gas sample and possessed a vapor pressure of 585 mm Hg at 100 degrees Fahrenheit. The second point of this curve has an abscissa 0.32 and an ordinate 985. This means that a portion of the pure butane fraction consisting of 0.17 per cent of the total gas sample has been added to the pentane fraction, making the total percentage of this new condensate equal to 0.32 per cent of the whole gas sample and increasing its vapor pressure to 985 mm Hg at 100 degrees Fahrenheit. Further points on the curve were obtained by adding measured percentages of the pure butane to the condensates and noting in order the increased vapor pressures at the same temperature.

When the curve has been drawn through these experimentally determined points, its intersections with the pressure abscissae may be read and interpreted as follows: The maximum possible amount of hydrocarbon condensate possessing a vapor pressure of 10 pounds per square inch (gauge) at 100 degrees Fahrenheit which may be extracted from this gas is 0.49 per cent by volume of the total gas. Any mixture occurring in excess of 0.49 per cent must possess a higher vapor pressure, and would have to be shipped as "casinghead gasoline" according to the Interstate Commerce Regulations. The maximum percentages have been similarly noted on the curve at intersections with the abscissae corresponding to vapor pressures of 0, 5, 15 and 20 pounds per square inch gauge.

The curves $C3_V$ 100 degrees Fahrenheit, $X1_V$ 100 degrees Fahrenheit and $C5_V$ 100 degrees Fahrenheit have been drawn in the same manner from experimental data. The curve $C1_V$ 60 degrees Fahrenheit represents a series of condensates, the saturation pressures of which were measured at 60 degrees Fahrenheit rather than 100 degrees Fahrenheit, and illustrates a characteristic difference to be expected at lower temperatures. If the investigator is not concerned with shipping regulations, but has in mind some specific product designed to meet individual needs, he may of course examine such a series of condensates over any desired range of temperatures or pressures.

Conversion to Gallons/1,000,000 Ft.³

The natural gas engineer is interested in knowing how many gallons of condensate may be obtained per unit volume of natural gas, and the percentages expressed in the vapor phase do not directly reveal this. If the exact percentage composition of the pentane fraction is known, the gallons of condensate per 1,000,000 cubic feet of gas might be calculated for this fraction and for the subsequent mixtures of this with the increments of pure butane. However, the separation of the pentane fraction is impractical, in the present instance, not only because of the closeness of the boil-

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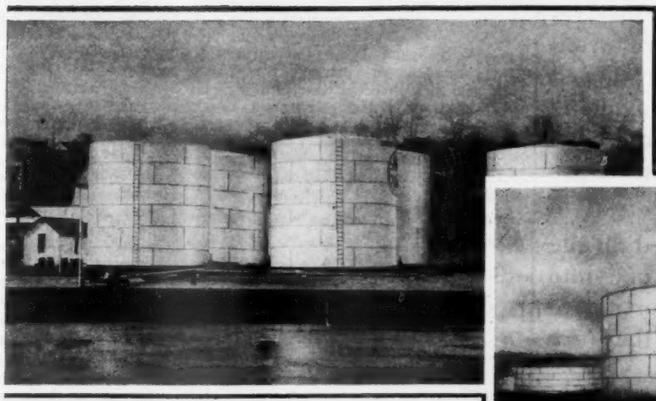

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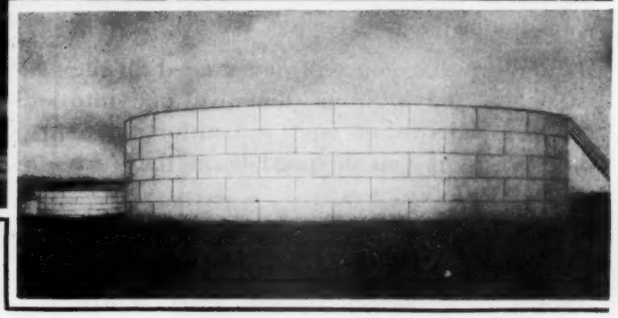

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ing points of its components but also because of the fact that the amount of condensate available for fractionation is extremely small. While the separation is not impossible, it is not to be considered in the present work.

Another method of attack seems fairly simple. This follows from the consideration of the data tabulated below, which gives the volume relations of vapor and liquid phases for butane, pentane, hexane and heptane.

TABLE 1—VOLUME RELATIONS OF VAPOR AND LIQUID PHASES

Hydrocarbon—	Density of liquid (0°C.) (I.C.T.)	Mol. weight	Wt. of a normal liter of vapor (Calc.)	Vapor volume which condenses to 1 vol. liquid	Ft.³ vapor condensing to 1 gal. liquid	Gal. per 10,000 ft.³ vapor
Butane	0.601	58.08	2.591	232.0	31.02	322
Pentane	0.64537	72.096	3.216	200.7	26.83	373
Hexane	0.6769	86.112	3.842	176.2	23.56	425
Heptane	0.70048	100.128	4.467	156.8	20.96	477

The vapor volumes in the foregoing table are all measured dry at 0 degree Centigrade, 760 mm. Hg. All experimental values reported in this work are for gas volumes measured under these standard conditions. The final column then expresses gallons of condensate at 0 degree Centigrade per 10,000 cubic feet vapor at 0 degree Centigrade, 760 mm Hg. If the natural gas engineer desires to convert the butane factor to gallons (0 degree Centigrade) per 10,000 cubic feet at 60 degrees Fahrenheit, 30 inches Hg, the figure 305 should be used instead of 322, and should be applied as shown in the following discussion.

Since the gallons of condensate are usually reported per unit volume of 1,000,000 cubic feet of gas, the figures in the last column of this table represent the gallons of condensate which each hydrocarbon would yield if present to the extent of 1 per cent by volume in the total gas. In the light of these data it will be seen that appreciable error must result if an average factor is chosen to convert per cent by volume to gallons per 1,000,000 cubic feet. Such a conversion factor must depend not only on the actual initial composition of the pentane fraction but also upon the percentage of butane added at any step.

If, however, the actual liquid volume of the pentane fraction is measured by means of the weight burette (B_1), the calculation may be made to follow rather closely the change in percentage composition of the successive condensates. For example, consider again the curve C4$_v$. The volume of the pentane fraction of this gas measured in the liquid phase was found to be 64.5 gallons per 1,000,000 cubic feet. This corresponded to 0.15 per cent by volume in the vapor phase. If this condensate had occurred to the extent of 1 per cent volume of the total gas, the amount of condensate would have been 430 gallons per 1,000,000 cubic feet. For each 1 per cent by volume of butane existing as vapor in the total gas, 322 gallons per 1,000,000 cubic feet might be condensed. If a line is now drawn with percentages of butane from 0 to 100 as abscissae and gallons per 1,000,000 cubic feet as ordinates, with the values 0 per cent butane equals 430 gallons per 1,000,000 cubic feet and 100 per cent butane equals 322 gallons per 1,000,000 cubic feet, the figures for gallons per 1,000,000 cubic feet corresponding to any percentage of butane in the mixture for each per cent of mixture present in the total gas may be read.

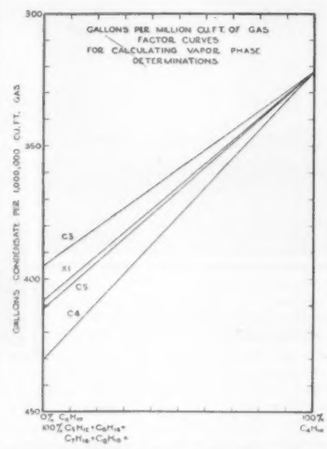

Figure 3—Conversion factors for transferring each 1% by volume determined in the vapor phase to gallons per 1,000,000 feet.

Interpretation of Curves

This has been done in Figure 3, of which the line C4 refers to the sample under discussion. Referring back to curve C4$_v$ of Figure 2, the second experimental value noted is for a mixture representing 0.32 per cent of the total which was obtained by adding 0.17 per cent of butane to the 0.15 per cent of pentane —plus. The percentage of butane in this mixture is 0.17/0.32 equals 42. Reading from C4 of Figure 3, the value corresponding to 42 per cent of butane is 385 gallons per 1,000,000 cubic feet. That is, for each 1 per cent by volume of the 42 per cent C_4H_{10} plus 58 per cent C_5H_{12} plus mixture present in the total gas, 385 gallons of condensate can be obtained from 1,000,000 cubic feet. Since there is 0.32 per cent of the mixture, it would yield 0.32 times 385 equals 100 gallons per 1,000,000 cubic feet.

These calculations have been noted for all the C$_v$ curves of Figure 2 at points where they intersect the pressure ordinates of 0, 5, 10, 15 and 20 pounds per square inch gauge. The notations have been made in the following order: Per cent condensate times conversion factor equals gallons per 1,000,000 cubic feet. It may be noted in passing that the value of the saturation pressure for the pentane fraction of curve C3$_v$ indicates the presence of some butane in this residue.

The ultimate accuracy of this method will be limited by the precision of the separation by distillation. With a great deal of care a precision of 0.02 per cent of the total volume can be attained which (in the case of one liter of sample) would correspond to an accuracy of about 8 gallons per 1,000,000 cubic feet for the average condensate having a vapor pressure of 10 pounds per square inch. Other sources of error are the incorrect measurement of gas volume (negligible if a proper burette is used), failure to attain equilibrium in measuring vapor pressures (which may cause considerable errors), and the error in measurement of the liquid volume of the pentane condensate. The latter may result in an error of about the same magnitude as that arising from the limit of accuracy of the analytical separations.

Comparison of Measurement in Vapor and Liquid Phases

The natural gasoline content may be directly measured by means of the special weight burette. This method will eliminate some of the errors of the calculation from vapor phase measurements. The dependence upon the accuracy of the separation disappears, except that it is still absolutely essential that the butane fraction used shall contain no traces of propane or isobutane. The limiting accuracy lies in the measurement of the liquid volumes, and since this may be made to 0.001 ml, the figure representing gallons per 1,000,000 cubic feet should be correct to within 7.48 if a liter sample of gas is taken. This direct measurement is accordingly to be recommended when best results are sought. The objection offered by the method is simply that a volume measurement requires care and a considerable amount of time, so that by comparison the procedure is both more complicated and time consuming.

A number of these direct determinations of the liquid volumes of the condensates were made. The experimental data are noted on the series CL curves of Figure 2. The experimentally determined volumes were converted to gallons

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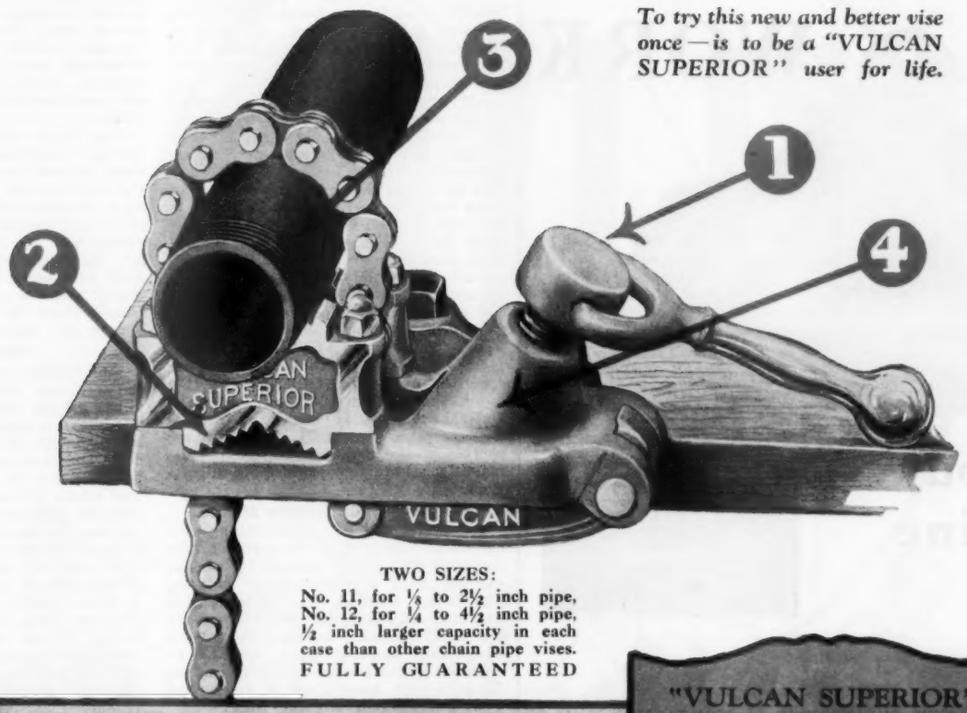

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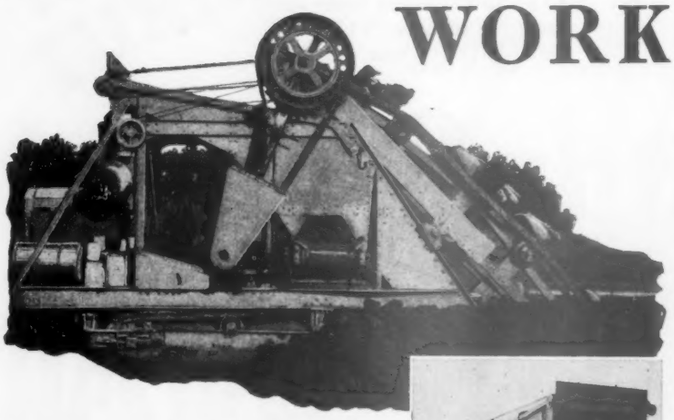

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per 1,000,000 cubic feet. The plotted values are noted by the crossed circles. These curves form the basis for a direct comparison between the two methods of determining the natural gasoline content. The data are tabulated in Tables 2 and 3.

At the beginning of this work, the Natural Gas Association Gasoline Committee named an accuracy of 10 gallons per 1,000,000 cubic feet as being entirely satisfactory for all purposes. A study of the data of Tables 2 and 3 shows that the calculation from vapor phase data checks the direct measurement in the liquid phase within the limits required by the natural gas engineer. The greatest difference noted between the two methods in the case of corresponding experimental values (Table 2) was 13 gallons per 1,000,000 cubic feet, and deviations from the average of the differences were all under 10 gallons per 1,000,000 cubic feet. In the case of values read from curves constructed from the experimental data (Table 3), the greatest difference noted was 17 gallons per 1,000,000 cubic feet, and the maximum deviation from the average of the differences was 10 gallons per 1,000,000 cubic feet. If all the values of Table 2 are considered, the average deviation between the two methods becomes plus 1 gallon per 1,000,000 cubic feet. It seems safe to assume that the vapor phase method, which is the shorter of the two, will satisfy the demands of all ordinary engineering calculations.

Comparison With Existing Methods

It now remains to compare the analytical results obtained by the methods here described with those obtained by various existing field and laboratory methods. The latter comprise the oil absorption and charcoal absorption methods in various modifications. Results reported for these field methods were obtained by members of the gasoline committee of the Natural Gas Association in connection with their standardization work.

The comparative data are assembled in Table 4. The first two columns of this table give the results of the methods here developed. The following columns give the reported results of the other methods for the same gases, together with their actual and percentage deviations from the new methods taken as standards. The figures reported for these tests are in general averages of an unreported number of tests. Check values reported for the same method are noted in brackets. Otherwise, when more than one value is reported, the gas has been tested by several modifications of the same general method.

Only three cases occur in which the ordinary methods gave higher results than the new method. In all three cases the determination was made by the method of charcoal adsorption. Two of these three determinations yielded satisfactory checks with the proposed standard method; the third, which was 21.2 per cent high, is explained by the fact that the vapor pressure of the condensate obtained from the charcoal exceeded 10 pounds per square inch.

Closest Checks

The closest checks observed between the ordinary and new methods were minus 2.0 per cent and plus 2.2 per cent. The greatest discrepancies were approximately minus 55 per cent. The average deviation was approximately minus 26 per cent for the case of oil absorption and minus 23 per cent for the case of charcoal absorption. (In obtaining these figures, the bracketed values of Table 4 were not taken independently, but averaged, and each set weighted as a single determination.) If the values for the gas X 6 are excepted, the range of percentage deviation from the reference method is minus 2.0 per cent to minus 42.2 per cent for oil absorption tests, and plus 21.2 per cent to minus 44.5 per cent for charcoal adsorption tests. There is apparently little justification for preferring

TABLE 2—COMPARISON OF NATURAL GASOLINE CONTENT OBTAINED FROM DIRECT MEASUREMENT IN LIQUID PHASE AND CALCULATED DETERMINATION IN VAPOR PHASE—EXPERIMENTAL VALUES

Gas—	Liquid-phase method	Vapor-phase method	Deviation of vapor-phase calculation from liquid-phase measurement=Δ	Deviation from average Δ
	Gallons per 1,000,000 feet³			
C4	65	65	..	..
	99	100	+1	1
	116	119	+3	1
	152	148	−4	6
	187	194	+7	5
Average	....	....	+2	....
C3	592	592	....	....
	621	628	+7	6
	662	656	−6	7
	705	700	−5	6
	746	755	+9	8
Average	....	....	+1	....
X1	804	804	....	....
	886	884	−2	2
	963	958	−5	1
	1,034	1,029	−5	1
	1,128	1,119	−9	5
Average	....	....	−4	....
C5	1,575	1,575	....	....
	1,592	1,590	−2	2
	1,661	1,670	+9	7
	1,758	1,764	+6	1
	1,929	1,942	+13	6
Average	....	....	+7	....

TABLE 3—COMPARISON OF NATURAL GASOLINE CONTENT OBTAINED FROM LIQUID-PHASE AND VAPOR-PHASE METHODS—VALUES READ FROM C_V AND C_1 CURVES

Gas—	Vapor-pressure gauge Lbs./in.²	Liquid-phase method	Vapor-phase method	Δ	Deviation from average Δ
		Gallons per 1,000,000 feet³			
C4	0	87	86	−1	6
	5	124	126	+2	3
	10	170	174	+4	1
	15	220	233	+13	8
	20	....	320	....	....
Average	....	....	....	+5	....
C3	5	595	596	+1	1
	10	643	640	−3	5
	15	724	732	+8	6
Average	....	....	....	+2	....
X1	0	868	865	−3	5
	5	964	955	−9	1
	10	1,064	1,052	−8	0
	15	1,166	1,155	−11	3
	20	....	1,266	....	....
Average	....	....	....	−8	....
C5	0	1,592	1,592	0	10
	5	1,748	1,765	+17	7
	10	2,008	2,021	+13	3
Average	....	....	....	+10	....

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one of these methods to the other when both are judged on the basis of these results.

There are three general conclusions to be drawn from the comparative data. The first is that different modifications of the same field-laboratory method yield results which do not always agree. The second is that no modification of the oil absorption method gives results which agree with any modification of the charcoal adsorption method. The third is that both the oil absorption and charcoal adsorption methods give results which are too low.

All of these facts were to be expected, since the oil absorption and charcoal adsorption methods involve many variable factors, some of which are not readily controlled. Even a thorough standardization of these test methods cannot entirely eliminate some of these variable factors. And back of these considerations lies this fundamental difficulty: The ordinary adsorption method seeks to determine a substance which has no identity. The substance isolated by the test is called the thing sought. If this were entirely reproducible, the idea would be convenient. Since it is not, confusion must result. The results obtained by the new method cannot be strictly compared with those yielded by the ordinary methods, since the new method isolates a perfectly definite condensate which can be analytically reproduced.

Conclusion

It has been shown that an exact definition of the term "natural gasoline" is a prerequisite to the determination of the actual natural gasoline content of a natural gas. A definition has been developed which describes the maximum amount of condensate, complying with shipping regulations, that can be extracted from a natural gas. A method has been developed for the accurate determination of natural gasoline thus defined. Analyses made by this proposed standard method have been compared with those made by the ordinary existing methods. The data obtained indicate that the natural gasoline content of a natural gas can only be determined by the use of such a method as the proposed standard one, since existing field and laboratory methods yield results which do not agree among themselves and in general are lower than values obtained by the standard method. It is further evident that the interpretation of experimental plant data, the determination of actual plant efficiencies, the study of the action of rectifying columns for the removal of propane from natural gasoline or for the production of special fractions from the natural gas condensates, and other special investigational problems must depend for their true solution upon such a reference method as here developed.

VENEZUELAN PRODUCTION

Production of crude oil in Venezuela in May totaled 12,038,164 bbls., an average of 388,328 bbls. daily, compared with 11,351,459 bbls., or 378,382 daily, in April, and 8,784,123 bbls., or 283,360 bbls. daily, in May, last year, according to O'Shaughnessy's South American oil reports.

May shipments from Venezuela aggregated 10,275,165 bbls., or 331,457 daily. In April these shipments totaled 9,661,449 bbls., or 322,049 daily, while in May, last year, they were 8,510,664 bbls., or 274,538 daily.

Venezuelan Oil Concessions, Ltd., produced 4,021,487 bbls., or 129,725 daily, in May. In April, its production was 3,894,294 bbls., or 129,810 daily; and in May, last year, 3,100,677 bbls., or 100,022 daily.

MAGNETOMETER RESULTS IN STATE OF MISSISSIPPI

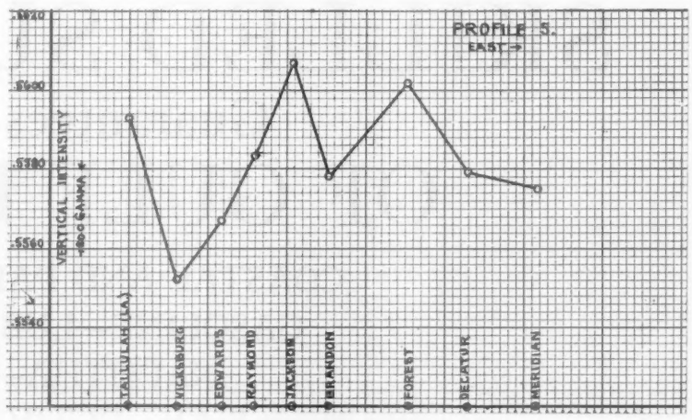
(Continued from Page 101)

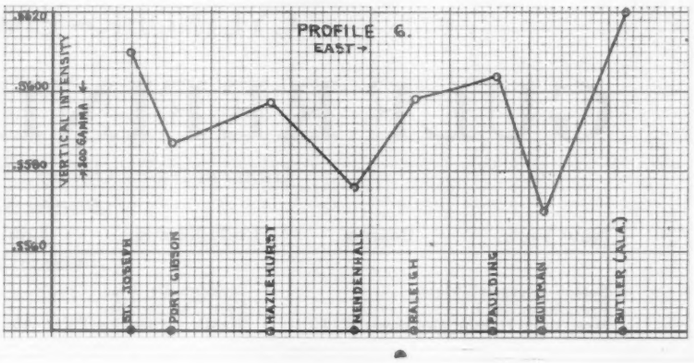
the low at Senatoba amounting to about 900 gamma, and the drop in intensity from Oxford to New Albany being over 500 gamma.

Profile 2 is interesting because it shows the No. 1 Carter well, one of the two gas producers of the State, located on the side of a large magnetic high at Hamilton, (Ala.).

Profile 3 shows the location of the No. 1 Rye. Unfortunately the traverses could not be chosen better, otherwise it would be seen that the No. 1 Rye is also located near the bottom of the same large magnetic high at Hamilton, (Ala.).

Profiles 4, 5, 6 and 7 point out that





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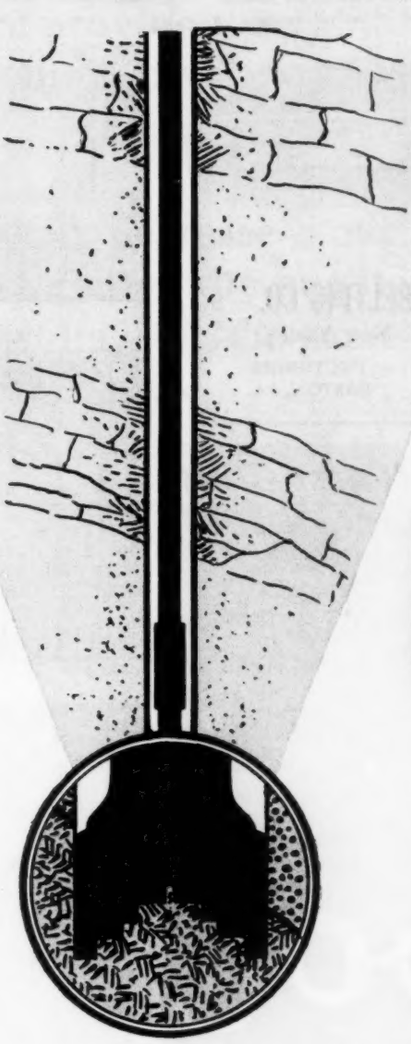

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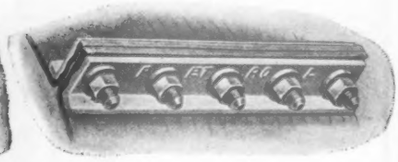

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in general the magnetic reliefs to be expected in a survey of Mississippi will be quite pronounced.

Profile 8 shows that magnetically, Vicksburg is in a region of low vertical intensity. The geological report shows that Vicksburg has recently been given considerable geologic attention.

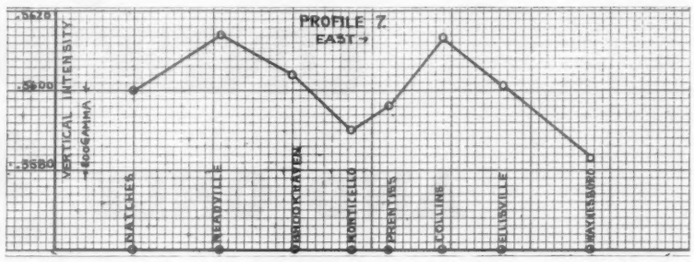
Profile 5 shows that east and west of Jackson there is a dropping off in intensity.

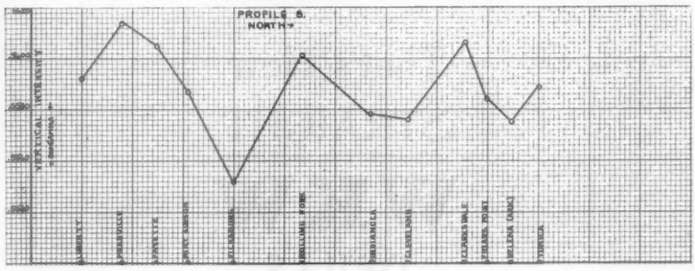
Profile 9 shows that south of Jackson there is only a slight drop in intensity while north of the town the intensity again drops off considerably. This same profile brings out quite clearly the general high dome-like structure from Greenwood to Sumner.

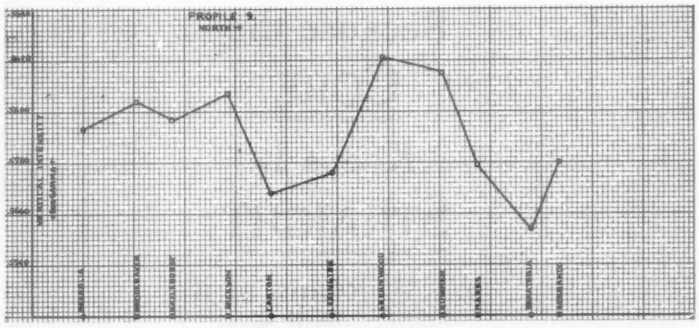
Profile 10 shows the decided magnetic low at Walthall which is also shown in Profile 3.

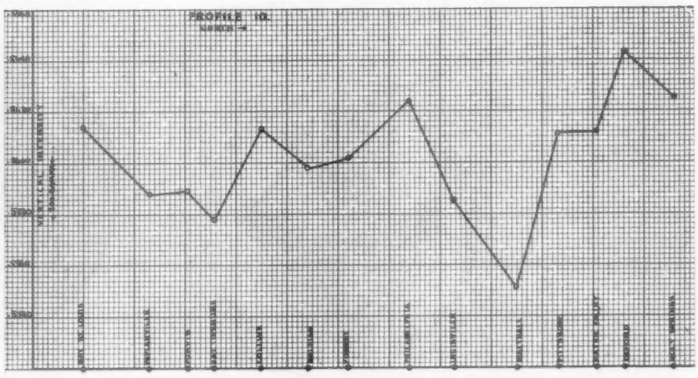
Conclusions

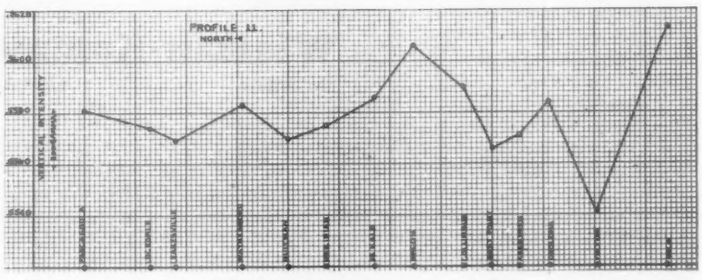
It has been shown that in the vicinity of Jackson the magnetometer results check fairly close to the known geology. The profiles have also brought out the











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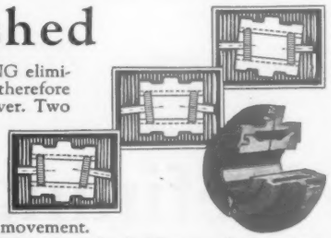

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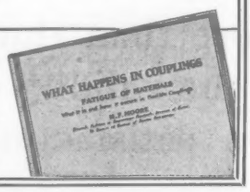

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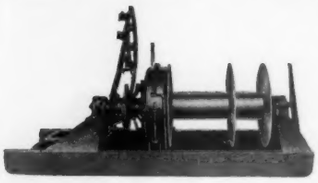

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general position of the two gas producers with reference to the magnetic structure.

It is true that a large number of wells have been drilled without getting production but a review of the facts concerning these failures as given in the State Bulletin 21 indicates that in several instances wells were abandoned before pay sands should normally have been reached while others were drilled without reference to structure.

The magnetometer study just presented points out that from magnetic basis the State offers considerable area that would be worthy of more detailed work. Magnetic reliefs of 500 gamma are quite frequent and with the general knowledge of the big regional magnetic highs and lows further detailed magnetometer work should be of great assistance in prospecting for oil and gas-producing structures in the State.

NATIONAL CONFERENCE STANDARDIZES GREASE

(Continued from Page 158)

structed that they can readily be operated to deliver each quantity for which a graduation, stop, or other indicating means is provided, within the tolerance on such amount hereinafter provided, and whenever any scale or dial is at some point or points or at all points the sole or most sensitive means of determining the amount of lubricant discharged, a volume of 1 pint shall be represented on such a scale or dial by a length of not less than 1 inch.

Constancy of Delivery.—The amounts delivered by any grease-measuring device shall not vary from the standard by more than the tolerances hereinafter provided (1) irrespective of the speed at which the device is operated, except that in the case of devices operated by air pressure, when operated at an air pressure lower than that specified by the manufacturer, the tolerance shall be applied in deficiency only—that is, the device shall not be deemed to be incorrect by reason of the tolerance in excess being exceeded during such method of operation—and (2) irrespective of the time elapsing between operations. In the case of all devices operated by air pressure there shall be legibly marked on the dial of the air-pressure gauge, by special graduations or otherwise, the maximum and minimum working pressures recommended by the manufacturer.

Indicating and Registering Parts.—Counters and graduated scales and dials used on grease-measuring devices to tally sales and deliveries to individual purchasers or to indicate the amount delivered when any portion of the cycle or stroke has been completed, shall be of such size and style and shall be so located and disposed that they may be easily read. The graduations shall be of such character and arrangement that the major ones are more prominent than and are clearly distinguishable from the minor ones. In all types of grease-measuring devices which utilize a graduated scale or dial to indicate the amount of lubricant discharged, the width of the graduation marks shall not exceed 0.04 inch.

Pointers and Indicators.—All pointers and indicators which when used in conjunction with a graduated scale or dial, indicate the amount of lubricant discharged shall be so shaped that a correct and accurate indication is given. Such pointers and indicators are required to be symmetrical about the graduation lines at which they may stand and shall reach to the finest graduation marks; the width of the end of the pointer or indicator shall not be greater than the width of such marks.

Parallax.—All grease-measuring devices in which the accuracy of the readings of any indicating mechanism is affected by parallax shall be so designed and constructed as to reduce to a minimum the errors due to this cause.

Graduated Scales.—When a grease-measuring device is provided with a graduated scale or dial, this shall be riveted or otherwise permanently attached to its supports.

Numbering of Graduations.—Figures

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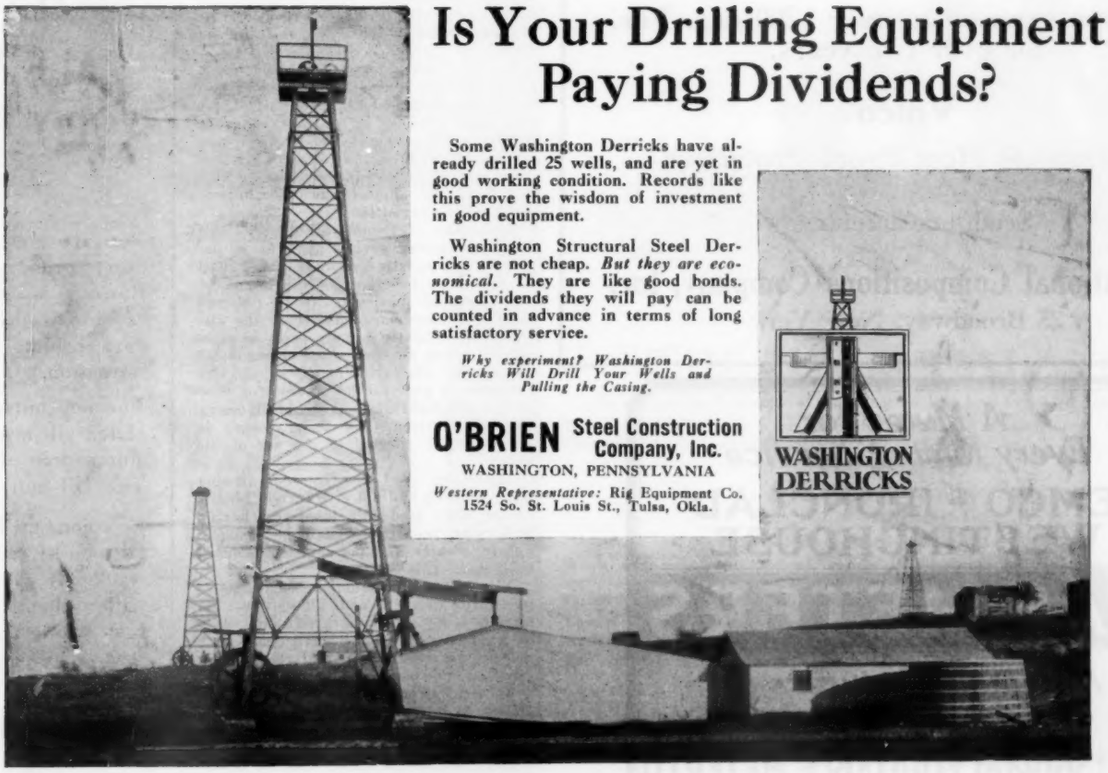

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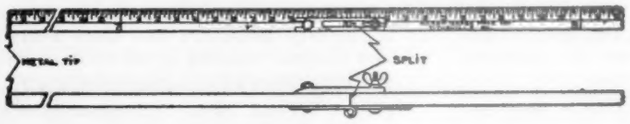

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Lettering and Graduations—All markings, instructions, figures, and graduations required under these specifications shall be of such size, design, material and location, and shall be so applied or affixed, that they will not tend easily to become obliterated or illegible.

Movement of Indicating Element.—All grease-measuring devices shall be so designed and constructed that the indicating element used in tallying deliveries to individual purchasers shall be susceptible of forward movement only by the mechanical operation of the device itself. The indicating element shall be returnable readily to a definite and clear zero indication before the next delivery is begun. Means shall be provided to prevent the indicating element from being returned beyond the zero indication.

Positive Stops.—When stops or other stroke-limiting devices are employed on a grease-measuring device and these are subject to direct pressure or impact in the operation of the device, such stops shall be of such construction that the permanence and security of their positions is provided for by a positive, nonfrictional engagement of the parts whose relative motions are to be prevented. Such stops shall be so designed and constructed that adjustment within the prescribed tolerances can be made.

Positioning of Stop Mechanism.—All grease-measuring devices designed to deliver two or more different predetermined amounts by bringing into operation different stops or other means of defining the delivery, shall be so designed and constructed that the position for the proper setting of each stop is definitely and accurately defined, inadvertent displacement from this position is obstructed, and the delivery for which the device is set at any time is clearly and conspicuously indicated.

Provision for Sealing.—All devices, adapated to be altered for adjusting or correcting the delivery of a grease-measuring device, shall be of such construction that they can be sealed, either separately or together, in such a manner that the position of none of them can be changed without destroying the seal or seals.

Use of Adjustments.—No adjustment of the delivery of a defined-stroke grease-measuring device shall be permitted except that intended to produce a piston displacement per cycle of 28.875 cubic inches per indicated pint of delivery. Adjustments of piston displacement to correct for leaks, slippage, or other defects shall not be permitted.

Assurance of Complete Delivery.—All grease-measuring devices shall be so designed and constructed that there shall be no means provided by which any of the measured lubricant can be diverted from the measuring chamber or the discharge line to the supply tank or elsewhere during the period of operation of the device. All valves in the supply line intended to prevent the reversal of flow of the lubricant shall be of such design and construction that their closure is automatically effected in the use of the device.

Limitation of Use.—Grease-measuring devices which will not give correct results except when used with lubricants having particular properties, shall be conspicuously, clearly and permanently marked to indicate this limitation.

Fraudulent Construction.—All grease-measuring devices and all devices designed to be attached thereto and used in connection therewith shall be of such design and construction that they do not facilitate the perpetration of fraud.

Metric System.—No specification contained in the preceding pages shall be understood or construed to prohibit the sale or use of grease-measuring devices constructed or graduated in units of the metric system. The tolerances to be allowed on any grease-measuring device constructed or graduated in units of the metric system, shall be the same as those

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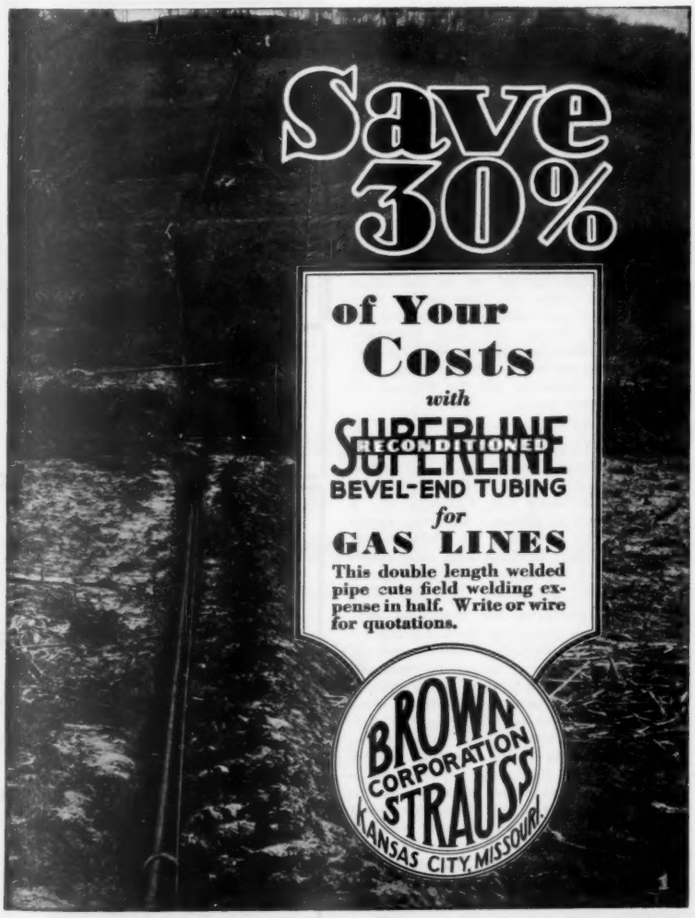

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Recent Patents

1,714,090. Art of Cracking Hydrocarbons. Eugene C. Herthel, Chicago, Ill., and Harry L. Pelzer, Highland, Ind., assignors to Sinclair Refining Co., New York, N. Y., a Corporation of Maine. Filed June 11, 1927. Serial No. 198,252. 4 Claims. (Cl. 196—66.)

1. An improved method of cracking hydrocarbon oils, which comprises maintaining a body of oil at a cracking temperature and taking off vapors including vapors of the cracked product therefrom under pressure, circulating oil from the body through heating tubes externally exposed to heating gases and back to the body, maintaining a bed of finely divided filtering material in the body of oil in the path of the circulating oil, and introducing a gaseous heating medium heated to a cracking temperature into the body of oil beneath the bed of finely divided filtering material.

1,713,117. Method of Separating Solids From Oil. John C. Deacon, Bakersfield, Calif., assignor, by mesne assignments, to Standard Oil Co. of California, San Francisco, Calif., a Corporation of Delaware. Filed December 10, 1924. Serial No. 754,965. 2 Claims. (Cl. 196—4.)

1. The method of separating water and solids from oil contaminated with them which consists in establishing a body of water and a scum at the surface of the water, continuously discharging oil contaminated with water and solids upwardly through the water into the scum to cause the oil to pass into the zone lying above the level of the scum to filter the oil and separate the water therefrom and to continuously add solids from the contaminated oil to the scum to take the place of those solids that absorb water and sink to the bottom of the body of water, and thus maintain the scum, drawing off water from beneath the scum as it accumulates, and continuously drawing off the filtered oil from above the scum.

1,714,133. Dewaxing of Oil. Ernest B. Phillips, East Chicago, Ind., and James G. Stafford, Chicago, Ill., assignors to Sinclair Refining Co., Chicago, Ill., a Corporation of Maine. Original application filed February 19, 1924, Serial No. 693,770. Divided and this application filed November 28, 1924. Serial No. 752,507. 4 Claims. (Cl. 196—19.)

1. An apparatus for dewaxing oils, comprising an insulated tank having refrigerating and agitating means therein, means for supplying oil to be dewaxed and means for supplying a finely divided solid material to said tank, a filter press with a connection for charging the mixture from the tank to the filter press, said filter press being adapted for filtering wax and finely divided solid material from the oil under pressure, means for separating the wax from the finely divided solid material, a dryer adapted to receive the finely divided solid material from the said separating means and means for returning dried finely divided solid material from said dryer to the insulated tank.

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June 13, 1929

Mr. John W. Egan, General Manager
The Oil and Gas Journal
Tulsa, Oklahoma

Dear Mr. Egan:

The Board of Directors of the Natural Gasoline Association of America at their regular meeting June 11th, 1929, reviewed the editorial entitled, "An Example in Practical Research," appearing in the May 30th, 1929 issue of The Oil and Gas Journal.

As directors of this Association, which is so broadly representative of the whole natural gasoline industry, we wish to thank the management of The Oil and Gas Journal for the kindly thoughts expressed and to compliment you on holding such ideals and services up before the petroleum industry as an example of what cooperative research work can accomplish if properly understood, financed, and whole-heartedly supported.

This Association feels proud that its efforts have been productive and its accomplishments recognized.

Yours very truly,

The Board of Directors
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Ray E. Miller

By, Ray E. Miller, Secretary-Treasurer.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR APRIL

Runs

	Month	Dy. av.
Prairie Pipe Line Co.*	4,530,000	151,000
Gulf Pipe Line Co.	1,564,949	52,165
Texas Pipe Line Co.	922,992	30,766
Empire Pipe Line Co.	1,161,291	38,710
Magnolia Pipe Line Co.	2,095,764	69,859
Cosden Pipe Line Co.	908,794	30,293
Sinclair Pipe Line Co.	3,240,000	108,000
Oklahoma Pipe Line Co.	3,194,549	106,485
Other lines	5,730,000	191,000
Total April	23,348,339	778,278
Total March	23,784,055	767,228
Difference	435,716	11,050

Shipments

Prairie Pipe Line Co.†	5,952,638	198,421
Gulf Pipe Line Co.	1,647,191	54,906
Texas Pipe Line Co.	1,146,592	38,220
Empire Pipe Line Co.	1,180,558	39,362
Magnolia Pipe Line Co.	2,216,023	73,867
Cosden Pipe Line Co.	825,750	27,525
Sinclair Pipe Line Co.†	3,095,208	103,174
Oklahoma Pipe Line Co.	3,131,951	104,398
Other lines	6,000,000	200,000
Total April	25,195,911	839,863
Total March	25,855,029	834,035
Difference	659,118	5,828

Stocks

Prairie Oil & Gas Co.*	37,322,000
Gulf Pipe Line and Gypsy Oil Co.	9,579,763
The Texas Company	8,040,740
Empire Pipe Line Co.	4,128,767
Cosden Pipe Line Co.	3,519,000
Sinclair Crude Oil Pur. Co.*	20,600,000
Magnolia Petroleum Co.	9,855,607
Oklahoma Pipe Line Co.	3,133,733
Carter Oil Co.	11,488,724
Other lines*	11,750,000
Total April	119,418,334
Total March	121,191,264
Difference	1,772,930

*Estimated. †Prairie shipments include Texas crude oil and Sinclair shipments include Texas and Wyoming crude oil.

Note: Stocks do not include approximately 5,350,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINE REPORT

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for April and May:

	Apr., '29	May, '29
Nat. Transit	220,177.96	253,769.83
S. W. Pa. P. L.	96,471.45	100,936.95
Eureka P. L.	361,294.32	380,915.89
Buckeye P. L. (Macksburg)	335,779.62	343,829.07
Buckeye P. L. (Cleve.)	12,265.09	12,404.92
Buckeye P. L. (Lima, etc.)	103,296.03	111,166.94
Indiana P. L.	5,130.73	5,648.56
Cumberland P. L.	203,144.51	199,988.52
N. Y. Transit	31,202.58	31,526.85
Tidewater P. L.	233,576.47	260,931.30
Pure Oil	60,020.89	62,790.66
Emery P. L.	65,713.91	69,891.53
Paragon Dev.	18,255.49	17,045.54
Stoll Oil Ref.	6,979.37	6,113.39
Total	1,753,308.42	1,856,959.95
Daily average	58,443.61	59,901.93

Note—Indian Refining Co. also reported other receipts of 308,586.09 bbls. Paragon Refining Co. had other receipts of 186,357.33 bbls. Paragon Development had other receipts of 391.62 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky for April and May.

	Apr., '29	May, '29
Nat. Transit	459,812.50	571,534.68
S. W. Pa. P. L.	363,716.29	384,900.26
Eureka P. L.	248,843.98	242,388.07
Buckeye P. L. (Macksburg)	191,498.74	219,775.55
Buckeye P. L. (Cleve.)	1,941.40	2,185.24
Buckeye P. L. (Lima, etc.)	1,323,167.62	1,597,379.34
Indiana P. L.	1,380,184.34	1,456,199.16
Cumberland P. L.	184,506.68	212,951.47
Southern P. L.	71,454.97	.....
N. Y. Transit	186,779.49	282,843.83
Northern P. L.	179,598.23	190,228.92
Tidewater P. L.	179,487.31	210,039.70
Pure Oil	57,602.63	61,580.15
Emery P. L.	63,977.39	74,596.34
Paragon Ref.	185,079.68	186,897.16
Paragon Dev.	14,456.13	19,208.47
Total	5,092,107.38	5,712,708.28
Daily average	169,736.91	184,280.91

Indian Refining Co. reported other deliveries of 222,665.75 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of April and May:

	Apr., '29	May, '29
Nat. Transit	716,361.68	800,104.62
S. W. Pa. P. L.	423,480.13	466,368.92
Eureka P. L.	1,305,585.15	1,224,524.89
Buckeye P. L. (Macksburg)	517,342.15	463,437.44
Buckeye P. L. (Cleve.)	36,739.70	54,068.74
Buckeye P. L. (Lima, etc.)	1,977,226.44	1,917,019.67
Indiana P. L.	541,456.22	507,698.71
Cumberland P. L.	589,250.22	581,865.71
Southern P. L.	472,810.29	488,042.66
N. Y. Transit	319,023.52	233,636.63
Northern P. L.	384,396.22	408,913.03
Tidewater P. L.	1,317,878.72	1,291,934.65
Pure Oil	11,307.22	13,042.02
Emery P. L.	14,291.05	9,439.08
Paragon Ref.	18,502.92	17,668.51
Indian Ref.	68,506.50	152,604.26
Paragon Dev.	8,966.70	7,540.83
Tuscarora	255,038.02	265,649.33
Total	8,978,171.85	8,903,559.70
Decrease	23,385.66	74,612.15

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of April and May showing the gross stocks of the above fields:

	Apr., 1929	May, 1929
Pennsylvania	3,399,836.77	3,350,662.61
Lima	557,347.94	587,235.33
Kentucky	781,911.36	787,127.03
Mid-Continent	3,956,708.61	3,788,393.60
Illinois	282,367.17	390,141.13
Total	8,978,171.85	8,903,559.70

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
January	55,630	56,209	52,904	51,749
February	60,394	61,298	57,002	51,833
March	61,644	63,247	57,485	54,252
April	63,019	60,927	56,812	58,444
May	60,580	60,284	62,067	59,902
July	63,206	58,674	57,144	.....
August	61,815	60,870	57,745	.....
September	64,639	60,285	53,487	.....
October	161,132	147,080	58,100	.....
November	67,774	57,275	53,565	.....
December	58,755	53,089	52,025	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
Jan.	156,056	141,227	146,465	165,721
Feb.	159,488	138,534	167,368	159,387
Mar.	150,239	133,777	158,883	161,474
April	152,374	140,227	172,935	169,737
May	160,998	144,594	180,559	184,281
July	160,045	151,850	189,470	.....
Aug.	151,929	188,653	192,853	.....
Sept.	158,915	144,213	194,138	.....
Oct.	161,132	147,036	176,000	.....
Nov.	172,608	150,975	176,898	.....
Dec.	136,428	144,504	173,572	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1927	1928	1929
Jan.	9,718,008	12,276,710	7,596,564
Feb.	10,119,162	12,180,419	8,738,835
Mar.	10,794,044	12,239,725	9,002,058
April	11,112,295	11,740,125	8,978,172
May	11,359,381	11,602,468	8,903,560
June	11,493,673	11,287,678	.....
July	11,458,128	10,819,331	.....
Aug.	11,989,115	10,236,743	.....
Sept.	12,212,716	9,660,910	.....
Oct.	12,047,661	9,229,709	.....
Nov.	11,939,740	8,366,553	.....
Dec.	12,340,297	7,539,555	.....

Franklin Pipe Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the month named and not counted in the stocks and averages reported above:

1928—	Runs	Shipments	Stocks
June	3,153.08	2,779.02	17,922.58
July	2,902.50	3,628.02	17,197.06
Aug.	2,874.11	2,350.13	17,721.04
Sept.	2,820.31	5,255.42	15,285.93
Oct.	1,289.93	538.89	17,551.93
Nov.	2,663.53	788.47	19,426.99
Dec.	3,053.60	3,167.53	19,426.99
1929—			
Jan.	2,099.90	.....	19,313.06
Feb.	2,469.47	6,873.20	17,009.23
March	3,330.82	3,595.01	16,745.04
April	4,864.07	4,243.59	17,365.52
May	2,688.59	2,455.54	17,598.57

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, June 1	2,412,509.36
Runs from wells	581,291.12
Other receipts	468,875.35
Regular deliveries	617,578.55
Other deliveries	448,846.85

The amount of Illinois oil run by the Tidewater Pipe Co. in May was 27,690.56 bbls. Deliveries were 56,234.28 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1928—	Runs	Deliveries
June	608,552.49	625,087.33
July	612,286.49	565,678.37
August	639,074.85	671,864.02
September	570,307.91	737,293.50
October	626,147.64	626,290.40
November	576,332.88	702,589.93
December	584,633.00	491,517.26
1929—		
January	570,727.38	545,084.66
February	517,330.17	503,387.70
March	728,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83

Tidewater Pipe Co., Ltd., also delivered in May, 151,979.23 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
December	4,968	2,968	24,678	18,806	3,064	54,484	.....	.....	.....	.....	2,419	56,903
January	15,838	.....	16,676	11,838	7,938	52,290	.....	.....	.....	.....	5,161	57,451
February	14,214	.....	38,750	17,250	11,607	81,821	.....	.....	.....	.....	3,750	85,571
March	19,903	968	31,258	18,581	7,355	78,065	.....	.....	.....	.....	.....	78,065
April	16,667	.....	32,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	65,200
May	16,226	2,416	31,326	10,806	2,129	62,903	.....	.....	.....	.....	.....	62,903

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
December	15,419	15,968	140,871	42,323	8,709	223,290	2,903	35,129	2,355	.....	40,387	263,677
January	11,936	8,903	130,065	34,871	15,709	201,484	.....	34,808	4,093	1,287	40,193	241,677
February	13,750	15,071	135,179	32,750	17,893	214,643	.....	34,357	821	143	35,321	249,964
March	18,548	26,064	145,516	39,162	28,162	257,452	.....	42,581	2,323	.....	44,903	302,355
April	19,733	18,367	137,233	50,267	22,567	248,167	6,867	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,322	259,322	6,677	26,323	3,000	1,323	37,323	296,645

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS

(In barrels of 42 gallons)

1928—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
May:	Month	19,331,866	19,443,355	21,220,046	3,367,809	2,843,847	1,926,026	2,525,043	3,619,000	74,276,993
	Daily average	623,609	627,205	684,518	108,639	91,737	62,130	81,447	116,742	2,396,032
June:	Month	19,164,244	18,482,981	19,877,936	3,202,050	3,075,911	2,074,422	2,425,470	3,401,000	71,704,014
	Daily average	638,808	616,099	662,598	106,735	102,530	69,147	80,849	113,367	2,390,134
July:	Month	19,754,458	18,809,188	22,055,737	3,171,548	2,792,139	2,238,090	2,492,586	3,487,000	74,800,746
	Daily average	637,241	606,748	711,475	102,308	90,069	72,131	80,406	112,484	2,412,927
August:	Month	19,444,899	20,840,804	22,339,131	3,147,058	2,711,787	1,989,264	2,561,840	3,556,000	76,590,783
	Daily average	627,255	672,284	720,448	101,518	87,477	64,170	82,640	114,709	2,470,670
September:	Month	18,908,169	22,456,360	21,554,269	3,047,250	2,540,070	1,830,225	2,423,430	3,329,900	75,998,273
	Daily average	630,272	748,562	718,207	101,575	84,669	61,007	81,047	104,300	2,533,279
October:	Month	19,430,992	23,431,071	22,176,853	3,058,460	2,652,484	1,836,221	2,571,822	3,612,000	78,769,903
	Daily average	626,806	755,841	715,376	98,660	85,564	59,233	82,962	116,516	2,540,964
November:	Month	19,907,528	22,073,680	20,791,798	2,977,800	2,476,080	1,801,914	2,388,870	3,348,000	75,770,668
	Daily average	663,584	735,956	693,059	99,260	82,536	60,064	79,629	111,600	2,505,689
December:	Month	21,574,703	22,425,722	22,180,102	2,988,400	2,521,571	1,846,841	2,389,040	3,581,000	79,407,379
	Daily average	695,958	723,410	715,487	96,400	81,341	59,576	73,840	115,516	2,561,528
1929—										
January:	Month	23,385,939	22,417,030	23,412,192	2,861,641	2,453,526	1,807,887	2,076,070	3,379,000	81,793,285
	Daily average	754,385	723,130	755,232	92,311	79,146	58,318	66,970	109,000	2,638,492
February:	Month	22,300,707	20,448,764	20,816,209	2,557,968	2,154,194	1,569,930	1,965,656	3,122,000	74,935,428
	Daily average	796,454	730,313	743,436	91,356	76,936	56,068	70,202	111,500	2,676,262
March:	Month	24,324,729	20,838,262	24,358,592	2,951,076	2,241,734	1,756,153	2,195,823	3,503,000	82,169,369
	Daily average	784,669	672,202	784,669	95,196	72,314	56,650	70,833	113,000	2,650,623
April:	Month	23,295,060	20,235,390	23,493,097	3,106,980	2,188,680	1,702,497	2,085,030	3,516,000	79,622,734
	Daily average	776,502	674,513	783,102	103,566	72,956	56,750	69,501	117,200	2,654,090
Total 12 months		250,823,292	251,908,107	264,275,962	36,438,040	30,652,035	22,379,470	28,009,680	41,353,000	925,839,576

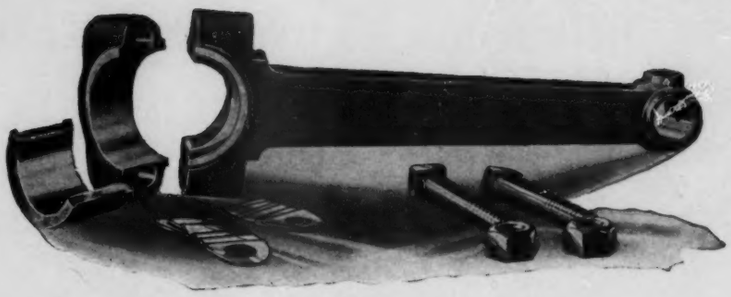
4 FEATURES OF GASO PUMP, FIG. 1508

1 Main and Pinion Shaft bearings are Timken Tapered Roller Bearings.

2 Main and Pinion Gears of continuous tooth Herringbone construction.

3 H-column Connecting Rod, with babbitt-lined, removable bronze shell at crank end.

4 Pump is fully enclosed, dust-proof, and entirely self lubricated.



An Enduring Connecting Rod . . . . . with Removable Bushing

Our Figure 1508 Pump has a connecting rod of best grade open hearth steel, of "H" construction for utmost strength, correctly balanced for smooth running.

The crosshead end is equipped with bronze bushing. The crank end has a removable, babbitt lined bronze shell, which is easily and quickly renewed in the field.

GASO PUMP & BURNER MFG. CO.
Tulsa, Okla.

210 Petroleum Bldg., Fort Worth, Texas

535 Fifth Ave., New York, N. Y.

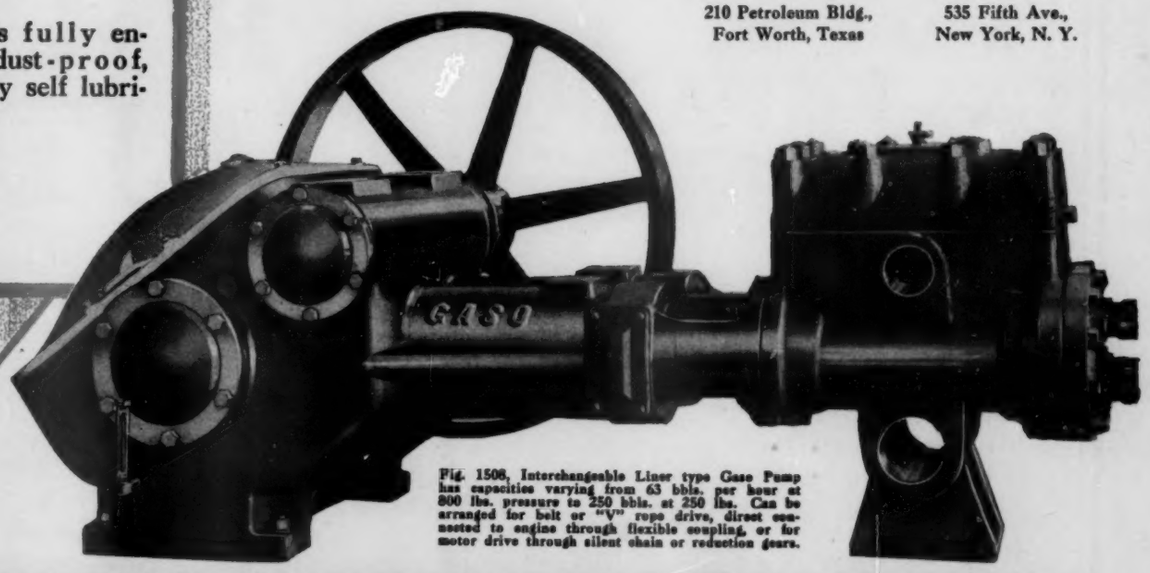


Fig. 1508, Interchangeable Liner type Gaso Pump has capacities varying from 63 bbls. per hour at 900 lbs. pressure to 250 bbls. at 250 lbs. Can be arranged for belt or "V" rope drive, direct connected to engine through flexible coupling, or for motor drive through silent chain or reduction gears.

GASO PUMPS

for every oil industry need

The HUGHES ROCK BIT~

VENTURA AVENUE CALIFORNIA

Ventura Avenue was one of the first fields in California where wells "more than a mile" in depth were common. The field was discovered early in 1915 at a comparatively shallow depth, and prior to 1926 was known as the "Ventura County-Newhall" field.

Total production for 1927 was 17,808,704 barrels; for 1928, approximately 19,000,000 barrels.

Many wells in this field are now completed at a depth greater than 7,000 feet.

—and other Hughes Tools have played an important part in the safe, fast, economical drilling of oil wells to the great depth necessary in Ventura and other fields.

Correct design, high quality of material, and careful workmanship are reflected in the superior performance of Hughes Tools.

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